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MORNING SESSION

The opening session of the Annual Meeting of the National Collegiate Track Coaches Association was called to order at 10:15 in Stephens Union, University of California, Berkeley, California, Mr. Brutus Hamilton, University of California, Chairman.

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PRESIDENT YOUNG: Gentlemen of the Association, I am glad to declare this Annual Meeting open.

It is a pleasure to welcome all you men and to welcome our visitors who are meeting with us for the first time today. I am sure the material that is to come will be very instructive and very interesting.

We are very glad to have you with us today. I am sure we can get much good out of such a meeting as this.

This is the fourteenth annual meeting of the National Collegiate Track and Field Meet. This is the ninth meeting of this Track Coaches Association.

This Association originally grew up around the Drake Relays and was known as the Western Track Coaches Association. Then in about 1927 to 1929, it was merged with the newly formed National Collegiate Track Coaches Association.

We also have another group down east who call themselves the American Track Coaches Association. That group of track coaches group themselves around the Annual IC4A meet, or Eastern Intercollegiate Meet, and it is composed chiefly of the coaches who go to that meet. I happen to be a member of that organization and I know that they are interested in the same things that we are interested in.

Last fall our cross-country team competed under three separate sets of rules. We competed under the IC4A rules, we competed under the National Collegiate rules and we competed under the AAU rules. And when your boys go to the Olympic Games they will compete under a fourth set of rules.

It seems to me, in any business, we must have standardization and if there is anything that the group can do I believe it should be to bring about one set of rules for our common good. The Eastern Track Coaches Association feel that same way about it.

The older men here will remember, about 20 years ago, we had three or four sets of basket ball rules, the AAU and the College, and the YMCA, and so on. They got together and standardized on one set of rules. And, of course, you know now how popular basket ball has become.

I believe we do need that same thing for our own good and for the good of our profession.

I believe before this meeting is over today, that it would be well for me to appoint a committee to look into the possibilities of the standardization of rules with all the other rules committees here in the United States. As long as we compete in the Olympic Games, international rules naturally will be the standard, and I believe that the more closely we can pattern our rules after the Olympic Rules the better we are going to be in the end.

I do not feel that it makes much difference whether we run 100 yards or 110 yards. The matter of meters or yards doesn't enter into this, but I think a standardization of the rules as to the length of time a man must hold on the mark, the number of trials your shot putter will get, and those things is desirable. The public enjoys spectacles which they understand. If they go to a meet today and see a team put ten men in a cross-country run, and they go tomorrow and see where the

rules limit it to six men, they do not understand the difference. Our boys understand it; that is their business, but the public doesn't. So we must have one set of rules.

The second objective which I think we might get behind for our common good is the matter of distance running. That question is an old one, but we know we are short on distance runners here in the United States. Maybe that is because of our mode of living, and the way we are brought up, and the customs of our country will not permit us to have great distance runners. But I think we should look into this thing and see just what can be done.

Now, today I am going to turn the program over to my colleague and friend, and one of America's finest young track coaches, Brutus Hamilton. Brutus, you may take charge and do with this program as you see fit.

Mr. Hamilton: Thank you, Mr. Young.

I heartily agree with everything that Mr. Young says about standardization and work towards that end, the standardization of rules. I also agree with Mr. Young in his statement that we should strive in every way to improve our weak events here in America.

Mr. Young has been active in this organization since its founding and his contributions to Track and Field have been many and permanent and I know we all appreciate what he has done.

I want to welcome all of you visiting coaches to Berkeley. I assure you it is a real pleasure for us here at the University of California to have you with us and to be the host for this Fourteenth Annual National Collegiate Meet. I want to thank all of the visiting coaches who have been so kind as to assist in various ways to help promote this meet. Many of you have given of your time to go to the radio and to go to luncheon clubs and it has been greatly appreciated.

We have a number of high school, junior college and college coaches as our guests today. We welcome them and we hope that the meeting will be profitable to them and we hope they will avail themselves of the opportunity to join the organization, either as full-fledged members, if they are eligible for full-fledged membership, or as associate members, as they all are eligible for associate membership.

Let us get right into our program.

A number of men have asked me to put Mr. L. M. LeCron, of Los Angeles, on the program first. We are all very interested in the Finnish method of javelin throwing, with which he is familiar.

Mr. LeCron has very kindly consented to come here and discuss this method of throwing with us. He is a very keen student of form, a keen analyst of javelin throwing, and I am sure that what he has to say will be of great benefit to all of us. I now take pleasure in introducing to you, Mr. L. M. LeCron, of Los Angeles.

THE FINNISH METHOD OF JAVELIN THROWING

Mr. L. M. LeCron (Los Angeles, California): I think, before I go into a discussion of this subject, that I had better pass around these pictures and let you take a look at them. Note the pictures of Matti Jarvinen throwing the javelin.

I think most coaches feel a weakness on javelin throwing and have a tendency to hope they will get a man with a good wing, and who will not hurt it during the season, and do not have much to say to him as to improving his form.

We have not made a particular study of javelin throwing here in America. The Finns have developed it to a point where they are far better than others indulging in the sport.

Last year a world's record was set in the javelin throw, reaching

a new mark of 251-½ feet. That isn't official yet, but it was an official throw. The same Finn threw the javelin 256 feet but not officially. Other Finns have thrown the javelin as far as 240 feet, and a German by the name of Wieman has also thrown it 240 feet. We think we have a good man if he gets it out once in a while to 215 or 220 feet.

There are really two parts of this form:

1. The run.

2. The throw itself.

In the run they use, instead of our usual hop or back cross step, a very much simpler and more natural form, and that is a front cross step.

They use a run of about 105 feet. This is the take-off board (foul line) here. (Indicating on blackboard.) This check is 30 feet from the board, approximately; the second is 90 and they start about 15 feet back of that. Both checks are hit with the left foot and it is eight strides from the last one to the first.

Those of you who saw the Olympic Games at Los Angeles notice they ran much faster than our men are able to run, that is, in coming up. They do not run at full speed, however. They seem to come along easily and about the fourth step from their first check, they gather and make a final fast rush. That is where their real speed is.

The part of their technique that counts is from the second check to the actual throw. They go through a count of five there. There are five steps in it. Of course, the arm movements are connected. In practice they make this count of five aloud and get coordination.

I don't know whether you can all see it, but I will walk through that.

Coming up from the first check, which is hit with the left foot, they are carrying the javelin in this position, (arm above shoulder, point forward and diagonally down.)

On No. 1, first step (on the right foot) they bring the tip up (level with the ground.)

On No. 2, the left foot turns in, pigeontoed, and the javelin is brought back.

On No. 3, the right foot crosses over in front of the left, and is placed on the ground almost parallel with the board. It is a short step, and the javelin is clear back by then.

On No. 4, the left foot reaches up ahead again, and the toe is pointed just about diagonal to the board, and that is their throwing position there. They throw on that No. 4 count. The stance is very wide, legs spread as much as possible, comfortably.

No. 5 is a semi-reverse.

In coming into that it is very simple. It seems to be much simpler than hopping or back stepping. It throws you into the position without any possible way of getting wrong in it. It seems to be the most natural thing that can be done (indicating.)

Now, in the throw itself--to get those together--they hold the javelin differently than most of our men. If you are throwing it similar to a baseball you do not get a good dip that way. The work is especially adapted to an overhead throw.

Instead of holding your forefinger behind the grip, they hold with the second, which is a longer and stronger finger, and this will give you very much better control. Any of you who will get ahold of a javelin and try it out afterwards will, if you will hold it like that and have somebody push the javelin once or twice sideways, you will see the difference in control you get with that grip, which means that the javelin is going out straight in front of you instead of off to

one side.

The second finger holding this, at the end of the grip, the fore finger curled around the shaft and the thumb can either be along the shaft like that, or it can come down against this finger (second). Most of them throw with it along the shaft. That steadies considerably your forefinger and the thumb.

In carrying through the run, they all carry it by the side of their head, and it should be beside the ear and point down (at about a 45 degree angle.)

Most of our men in the past--but they have learned otherwise now--have carried it behind them in this position (below shoulder, arm extended behind.) There are several disadvantages to it. In the first place, during the run the man is bound to be thinking of the javelin all the time, whether it is going to get away out to the side, and he won't have it right for the throw. Up here (above shoulder) he can forget the javelin until he is ready to throw.

In this position (low arm) when you start your throw, your arm is back. You never saw a baseball player start his throw with his arm back here. You cannot make a good throw that way. It is violating all first principles of throwing.

Your wind-up, or bringing your arm back, is part of the throw. It doesn't matter how you get it there, but it is part of the throw.

Johnny Myrra, who was the first of the great Finn throwers, carried it above the shoulder and when he made his throw, dropped it in a circle like this (forward circle.) Now, they let it drop back and it falls naturally into better position.

Now, this overhead throw that I am talking about, as the javelin comes forward, if the man was upright it would pass directly over the middle of his head in that position (indicating.) Actually when he throws he leans away from it so it doesn't go directly over his head. He is leaning away like that. (Indicating--to left, in the case of a right-handed thrower.)

Now, that throw, has, as its greatest advantage, the fact that you get these back muscles under the shoulder into it. With the ordinary throw that we have used before, your arm and shoulders do all the work. The back muscles don't work at all. The answer to that is, if they will try it, they will tell you quickly they can feel those muscles working. Those are big, strong muscles.

Aside from the speed that they get in the run, this is the main thing from which they get their distance, that is, the fact that they are getting the back muscles and the body into it. Your body doesn't get the energy behind it when the javelin is coming from the side.

Now, this throwing stance, after this front cross over, when they come into the throwing position they are drawn back just as far as they can get; the javelin tip is touching the ground practically. The right leg is bent slightly at the knee; the toe is pointing almost at right angles to the board, and the left leg is shot way out forward just about as far as they can stretch it comfortably, and it is a very much wider stance than in our throw.

Now, as the body goes forward, just as they get about erect, the arm is coming forward, and they drive off the right leg. Then they go on to the left and they get a continued drive off the left leg. With a back step, back cross, or with a hop, it is absolutely impossible to get your foot down in time to throw off both legs.

You have learned, in shot putting, you cannot put the shot without having both feet on the ground. The same applies to javelin throwing, though it is a different kind of a throw. You are completely losing the

drive off one leg if you throw too soon with one foot in the air.

That long stance also acts as a check on their speed which is why they can run faster and stop without going over that board. If you don't get that leg way out you won't be able to stop. That check comes--it is so quick that the javelin has left the hand before the check comes.

You will see, in one of these pictures, that the javelin has left the man's hand and he is right in the act of checking. He is up on his toes like that (indicating.) He is driving off the left leg on the toe. He has got his drive and the body weight is being stopped.

In finishing this throw they do not reverse; they make a semi-reverse. With our side-arm method, after you have thrown, the body is turned around so that the foot is parallel to the board, and your arm is throwing you clear around, like this (right side facing direction of throw.) With this Finnish method your foot is pointing in the direction of the throw and you have a much better brake--you stop like that, (indicating) and the harder you throw, the more the brake, and the better you stop.

With a beginner, to get that, it is best to teach him to bring his arm down to the right side of the leg after the throw and he won't go over the board. Then he comes to a dead stop because the harder he throws the more the force is straight in front of him and he can't go over. After he gets better--he does get better--the arm comes to the left of the knee but not as far to the left as our method, and that is usually good for two or three extra feet, because you can come down with your foot right in front of the board, instead of being afraid of stepping over and stopping back three or four feet from it.

I noticed in the Olympics in '32 Churchill (University of Calif.) was getting his throws off and he was bothered with his take-off. I think every one of his throws was made from six to eight feet behind the board. He just lost that much distance every time.

Now, this overhead throw, with this grip (indicating) the javelin is pushed up by the palm of the hand and then the fore finger--Mr. Hanner will tell you; he has a variation of that--giving an extra lift with the third and little fingers, but that pushes the javelin up in the air off the ball of the hand. Your hand is practically flat as it comes forward.

Now, I think the biggest fault of the javelin throwers is, they do not throw the javelin anywhere near high enough.

At this meet last year I had a good view from the side and I noticed that of all the best throwers in the country only one man got the javelin anywhere near high enough, and all of his throws were going well out beyond the others. That was Parke, of Oregon. He was getting his javelin a good 10 to 15 feet higher in the air than the others. Some of them were getting at least as much and more power than he was, but his was going on out because it was high enough in the air. Of course, if you don't have the power, a high throw is going to come down sooner and shorter; but you cannot get distance without having both height and power, so, in competition, if you don't get that height you will not get the distance.

I spoke about these muscles in the back not being needed in our method. Unless you get hold of a farmer boy who has done a lot of hard work, you will find those muscles are probably rather undeveloped.

If a man has got his arm in shape and suddenly changes to this style, he will hurt his back undoubtedly, throwing hard, and you have got to bring him gradually to it the same as you break his arm in gradually.

There are several exercises you can use to develop those muscles. The best one, although there aren't a lot of places you can do it, is

wood chopping. It is exactly the same movement as is used in throwing the javelin. If a boy can get to a good wood pile just let him get busy and he will develop those muscles. Not having a wood pile, the best exercise he can get is to saw off a javelin, a broken shaft or something, so that it is fairly thick here (near grip) and put a good heavy eye in there at the end of the shaft, then put another eye in your gymnasium, fairly low in the wall; then take an inner tube and split it so it isn't too wide, about an inch or two wide, and with the full length of the inner tube fasten it to the eye in the javelin and the eye in the floor and then pull against it with this throwing motion. Then take the javelin and stretch out the inner tube, holding it back like this (indicating) and you will find that is good exercise for those muscles. In addition, make them watch how they are bringing their arm up.

Now, in the matter of training, the Finns think we do not work enough in most events. I think they work harder in the javelin than our men ordinarily do, though I find the boys will overwork in the javelin if you let them, every time. But I think three days of throwing a week, two days of throwing and one of competition, is plenty, and I think one day, besides competition, is the best.

They don't throw a lot for distance in practice. They are continually working on coordination of this run-and-throw together. They go through that time and time again to get further coordination between the steps and the throw, and counting aloud is a great help in that.

QUESTION: Do you go through the count as you throw?

MR. LE CRON: Hitting the check with the left foot--one, the right foot is coming straight ahead and the javelin tip comes up; two is pigeon toed to the right with the javelin starting back; three is your front cross, and that should be short; four is a long stride and the throw; five is the reverse.

Perhaps you have some questions you would like to ask.

QUESTION: Regarding the use of the shoulder, is it on a straight line, or does it come around for the wind-up? Is it supposed to be straight, or do you come clear around?

MR. LE CRON: Bringing it back--when the arm comes back your right shoulder is thrown away back. The chest should not be twisted clear to the side, but it faces about half way to the front; then as you come forward the shoulder, the left shoulder, is pulled back and bringing the left arm back gives an extra force there the same way as it does in the shot put.

QUESTION: How much use do they make of the left arm, the position of it in the throw?

MR. LE CRON: It is bent--they get a kick back with the elbow.

QUESTION: Do they lead with the right or left?

MR. LE CRON: With the left arm.

QUESTION: Starting the form, they start with the left elbow?

MR. LE CRON: Yes.

QUESTION: What about the elevation of the right hand for height?

MR. LE CRON: In the run it should be beside your ear.

QUESTION: I mean from the start of the throw.

MR. LE CRON: It depends on the height of your man. In practicing, let him touch the ground with the back end of the javelin and then he is in the best position. He must be drawn clear back. Many of the men do not draw or come back far enough. The farther back, the more force can be given. Another thing, in that position do not let them bow their

stomach out. Your body is erect, though drawn back.

QUESTION: In dragging the tail of the javelin, doesn't it have a tendency to throw the javelin off line?

MR. LE CRON: If it touches, it might; though as your hand comes forward again, your hand will straighten it right up, usually.

QUESTION: What is the position of their right elbow, that is, do they get it very much ahead, or where?

MR. LE CRON: That is a matter of instinct. Many javelin throwers have hurt their arm. Either their arm isn't in shape yet, or they are not bringing their elbow ahead of the hand in the throw. We have learned that ourselves, a good many coaches, I think. The elbow must come--as th throw is made, the elbow must be ahead of the hand.

QUESTION: Don't you think most of your fellows, in throwing, they drop the elbow?

MR. LE CRON: Yes, If your elbow is coming up and ahead they will never hurt their arm. The hurt is usually from a side throw, where the elbow is behind the hand.

QUESTION: Do the Finns throw with a wrist snap?

MR. LE CRON: They say once in a while they do get sore arms. It seems to be a different kind of soreness from ours. I think that comes from the fact that they are throwing overhead, rather than from the side. They don't have very much trouble with their arms. When we get a bad arm with our men they seem to be ruined for the rest of their career, or for several months.

QUESTION: Why do the Finns use rather a bounding stride? Is that to give more drive?

MR. LE CRON: I think that Jarvinen is the only one that uses that. He explained that to me. He says he does it for balance. I think it is more of a peculiarity of his than anything else. I cannot see any point in it. He just feels that when he bounds that way he is getting his balance a little better; also, it does help pull up the knees. That is, pulling up your knees, is a help in getting your feet down through this count of five. They get quite a little rush of speed in those last four steps before they start that. They do not run fast at first. They come down fairly slowly and that is where Jarvinen does his bounding. and then he goes into a rush of speed. A number of coaches who have seen him said that he hops. He doesn't hop. He goes through exactly as I have said, but he gives that impression because he shortens the second step and puts his left foot down within a foot of the other, and if you do it fast it looks like a hop. With a hop you jump off one foot and land on the same foot. He doesn't. The short step makes it resemble a hop. He takes a shorter step in this number two than the rest of the Finns. Some of them stretch it out quite a bit.

That long stretch of the leg on the fourth count is probably the most important thing of all in your five counts because that gives you extra leg drive and your brake both.

QUESTION: Is Jarvinen's stance to get his hips parallel to the board, or further back around--I mean like this or that (indicating)?

MR. LE CRON: When in the drawn-back position the right hip should be drawn away back to the right, behind.

QUESTION: Does he get it by dropping his right knee?

MR. LE CRON: Yes, and by drawing the right hip clear back, because as you come forward then you get a little extra drive and power from the turning of your hip.

QUESTION: He throws his hip up under his back instead of around like our fellows do?

MR. LE CRON: Yes. Now in the drawn-back position do not let them

get their left shoulder too far to the right. It is only about half way (half-facing direction of throw.)

QUESTION: Wouldn't it be all right to let it go around further if he didn't have to hesitate to do it? They get set and move it back, a lot of them do it.

MR. LE CRON: Yes. It is more a matter of timing.

QUESTION: When they come in that position they should have their shoulder there without waiting that tenth of a second like some of our boys do.

MR. LE CRON: Yes. Some of you may be wondering where I got this dope. My partner was Finnish Olympic attache in 1932 and we went direct to the Finnish coach and the three Finn throwers to get this information. They were giving us this dope so we could pass it on to the coaches in this country. It was gone into as thoroughly as they could do it. You can take this as coming first hand.

QUESTION: Do all of the Finns carry the javelin above their shoulder in the run?

MR. LE CRON: They were trying holding it back here (behind shoulder) and they said you could not do that; that your hand coming back is part of the throw.

QUESTION: You hold it back all the time and it is bound to tire you out--for that 115 feet it is bound to tire you out.

MR. LE CRON: You are pulling it all the time. You are bound to be running with your body sideways and your arm back.

In changing your method, something ought to be said about that As a matter of practicability, you can use part of this Finnish method and discard the rest. For instance, if you have a man that is a senior and a good thrower, you are going to hesitate about changing him. Well, you are not going to hurt him a bit if you teach him the run. It will take him some time to get it. If the man has been hopping he has a terrible time getting over the hop, but keep working at it and let him use his hop during meets. Eventually he will begin to get that run. It is not going to change him, that is, hurt him. As a matter of fact he cannot be worse than with our method of running.

If you will watch these men when they throw, our best throwers, that is, most of them, they might just as well get back about five steps and take a little run and throw, instead of going way back and running up there. They come running up nice and fast and they stop and throw. They might as well run about five steps and throw, and they will get as much power. They are not getting anything from that run. When you hop you kill all the forward impetus. I have never seen a man throw with a hop that he might not just as well have been back only five steps and taken a little run.

MR. LE CRON: One thing about javelins themselves--there are two woods being used for the making of javelins:

1. Birch.

2. Ash.

Birch usually breaks easier than ash, but it is very much stiffer. The Finns, in making their javelins, use birch altogether. They get an entirely different balance on their javelins than the American javelins. Now, the farther backward you get your binding, the better the balance for throwing. They balance theirs at the front edge of the binding, where ours are balanced in the middle. In selecting javelins the further back you get the binding it is usually the best one to use.

The Finns do not have as heavy a steel tip at the head, and when the javelin is going through the air it sort of lays in the air, as they say. When it goes up it slowly comes down and the tip gradually tips

down. With a heavier type your tip is coming down too fast and it shortens the throw. That has nothing to do with the wood itself. The point I want to make is that birch wood is stiffer. Notice, when a javelin is thrown, how it whips in the air and quivers. That shortens the throw to some extent. The birch, being stiffer, somewhat eliminates that difficulty.

QUESTION: A javelin, for practice purposes, that gives, is much easier on your arm than one that is perfectly stiff?

MR. LE CRON: That might be, but I do not think you should change. You should use the same type in practice that you use in competition, or else there will be a different feel to it.

MR. HAYWARD: I think this Finnish style is the best, but the majority of the American boys do not feel they want to put in so much time to accomplish it; that is the trouble. In order to get the boys to master the Finnish form you should start in high school and not wait until he comes to the university or college.

CHAIRMAN HAMILTON: I am sure that Mr. LeCron's talk was very profitable. He has made an exhaustive study of this event. He is not a professional coach, but a man interested in athletics and his words will be greatly appreciated by all of us, and also the contributions made by the coaches from the floor.

I should like to ask Mr. Franklin Johnson to be next upon the program. "Pitch," as we all know him, has been track coach at Drake for a number of years. He is also director of the Drake Relays. He is one of the outstanding young men in the profession. I am sure that what he has to say about the Relays, and about athletic publicity, and about athletics and track and field in general, will be of interest to all of you.

RELAY GAMES

MR. F. P. (PITCH) JOHNSON: (Track Coach, Drake University) Mr. Chairman and gentlemen: If you did not know that Brutus had formerly coached at the University of Kansas you would be able to tell it by the way he pronounces "Relays." The University of Kansas is the only place they call it anything but "Relays" (accent on first syllable); they always place the accent on the last syllable.

I am not exactly in accord, or have not been in accord with Mr. Young on the proposition as to whether a discussion of Relays should be included in this program. You all know what Relays are, and how they are conducted, the interest that the public shows in them, and the interest that coaches show in taking teams to Relay Meets.

I am willing to devote a few minutes to this discussion, but I am not going to take a great deal of your time because there are much more important things to be discussed in our meeting today.

The first Relay Meet that I know anything about, and it is generally agreed upon, is the Penn Relays, started in 1892. They went along for a number of years with mediocre success. The public seemed to take a liking to them about 1900. That is about the time I was born, and, of course, I am just telling what other people have told me about it.

The interest became so great in this meet after that, from a competitive viewpoint and from a popular viewpoint, that John L. Griffith, who was then the director and coach of all sports at Drake, started the Drake Relays in 1910.

Following this, as closely as I can remember the dates the Illinois Indoor Relays were started in 1917; the Kansas Relays in 1922 or 1923; the Ohio State Relays in about 1925; and about that time, or a little bit later, the Georgia Tech Relays, the West Coast Relays, and several others. At the present time there are Relay Meets all over the

country for university and college competitors.

The public is more interested in Relay Meets, in my opinion, than in ordinary track meets in our part of the country. Out here you have such a tremendous interest in all kinds of track and field athletics that it doesn't seem necessary to make a meet a Relay Meet to get the people to come out to it.

When we have 10,000 people, or when we have 6000 people out to a track meet in our part of the country we think we have a good attendance. It seems that out here, when there is a dual meet, they want to see in numbers up to 30,000 or 40,000. I wish we had that in our part of the country, and I know a lot of other coaches that do too.

The reason I am going to talk about the Drake Relays is that I do not know the organization of many of the other meets. Our organization, the Drake Relays, is like that of any other meet. Certainly, the administration of the National Collegiate Meet here is just as much of a job, if not more of a job, than the administration of our meet. I know that we start thinking about it along in November, start working on it about the middle of January, and really get down to business on it the first of March, and for two months there is plenty to do. Like any other business, it has to head up to one person.

We have a Drake Relays Committee with a general chairman. There are nine men on the committee, all interested, all working for nothing, on the Drake Relays. Four men are downtown members; one is a lawyer, one an insurance man, one a real estate man, and the other is in the loan business. The other five are connected with the university.

We meet twice a month early in the winter, and as the meet comes closer, beginning about the end of February, we start meeting every week, laying our plans throughout the winter and early spring. No matter what kind of a meet we have, we usually feel that we have the plans pretty well rounded out for it and, as men who have been to our meet will testify, it usually goes off in pretty good shape.

Each one of these men on the Drake Relays Committee is in charge of a certain necessary item in administration of our Meet. One man is in charge of equipment, and gets everything ready that goes on or off the field--the movable items, all the implements and everything necessary in the way of equipment for the meet.

We have a publicity man who has several people working under him. He is a very efficient fellow. He works very closely with the Dps Moines papers.

I placed on the bulletin board there (indicating) copies of the Des Moines Register, which will give you an idea of the kind of publicity we get for a few days preceding the Relays. I have only four days' stuff on there. We get good publicity and great cooperation from the Des Moines Register & Tribune for a month preceding the Meet.

I would like to have you notice, if you are interested in that kind of a thing, the sheet that is about in the center of the bulletin board (indicating), which appears to be a blank sheet covered with small print from here, but it is a "form" sheet that one of the sporting editors gets out telling who are the likely winners in each of the events, that is, in the university and college class Relays, and special events. It is quite an interesting chart.

We have one man working on a Promotion Committee. He, in turn, works with a committee from the Des Moines Ad Club, which proves to be a very efficient organization. At least they think they have great ideas on what is good advertising and good promotion, and what isn't. To me it is interesting to note the tremendous interest that they show in the

promotion of our Meet. They meet regularly, beginning about the first of February, on Friday noons at luncheon, and spend about two hours there talking Relays.

The actual promotion and ticket sale for the Meet is taken care of by another group from the Greater Des Moines Committee, which is a downtown group working on anything that will bring people, business and attention to Des Moines. To say that they are invaluable in the success of our Meet, such as it is each year, is putting it very conservatively. It is a matter of fact that we could not get along without them now that we have them enlisted in our promotion efforts.

We have a man who takes charge entirely of hospitality, and who arranges the Friday evening dinner, which a number of you are familiar with. Many coaches come to Des Moines every year who do not bring Relay teams or competitors, but who insist on coming to that Friday evening dinner. It is a very interesting meeting. There are some talks, usually quite brief, but they have a good time and an interesting program altogether.

One man is in charge of the program and gets out a very good publication. I brought with me about 25 of this year's Drake Relays programs and will be glad to have anybody who wants them come up here and get them off the table after the meeting is over.

Another man on this general committee is in charge of ticket sales, and all arrangements for taking tickets and policing the stadium.

Another man is in charge of headquarters, which takes care of all information in a downtown hotel. He makes a record of where everyone is staying so you may get in touch with any friend of yours that might be at the Meet.

Then, of course, there is the director of the Meet and he takes care of everything that the other fellows do not. Chiefly he tries to see that interesting teams and individuals are brought to the Meet.

A few facts about our 1935 Meet: We had teams from 62 colleges and universities and from 21 states represented this year. We had 88 high schools; one as far away from Des Moines as Greenville, Mississippi. We had teams this year from California, from North Carolina, from Minnesota, and Texas. Most of our representation, naturally, comes from the Middle West. We have had very good representation from the Far West; occasionally we get a team from the East. But since our Meet comes on the same days as the Penn Relays we do not expect to get a great many eastern teams. The Penn Relays champion in the discus throw in 1934 came to our Meet this year. A boy from Texas (Rice Institute) was a little too tough for him.

In former years we have had Washington State, Occidental (Southern California) and Stanford from the West; and from the East, Dartmouth and the United States Military Academy, Florida, and that is about all.

If any of you have any questions about Relays Meets, or our Meet, I would be pleased to try to answer them.

QUESTION: Do you have a Junior College division in the Drake Relays?

MR. JOHNSON: We tried to start a Junior College division in 1934. We had heard that there were a number of Junior Colleges in our part of the country who wanted to compete in our Meet. We formerly let them compete in the college division; but in trying to work up a half mile Relay and a one mile Relay in a Junior College division, we only got two entries so we decided there was not such a great interest after all.

QUESTION: Your date is always the same, the last Saturday in

April?

MR. JOHNSON: It always has been.

I will close with an invitation to each of you to come to our Meet and to bring teams there. I would be pleased to correspond with any of you next spring regarding competition that we offer for out-of-state high schools, or in the college and university classes.(Applause.)

MR. HAMILTON: Thank you, Pitch, for your interesting talk on the Drake Relays.

Our own West Coast Relays are held at Fresno each year. They have been very successful in adding interest to West Coast tracks. I believe they will be held on May 8th next year. I am sure that we on the West Coast would appreciate cooperation, if it is possible, from coaches in other sections in sending men to our Meet at Fresno.

We have one handicap in promoting a Far Western Relay carnival, and that is a lack of a sufficient number of well balanced relay teams. Usually we have U.S.C., U.C.L.A., Stanford, California and Fresno State. Most of them have Relay teams and they do not enter in all of the events, but at the Drake Relays, you will have five or six very strong 880 and quarter mile Relay teams competing. At Fresno we will have only three or four.

I am sure that the Fresno people and the West Coast track people in general, would like to see men from other sections of the country send representatives to our Meet.

Now I see that I am on the program to speak on the "Edwards Track and Field Stadium." I am going to ask a man, who is much better versed on that subject to speak upon it, and I refer to Walter Christie, who was the coach here at the time the stadium was built and who planned most of the features of this stadium; at least he was on the advisory committee and the track, at least, is according to his directions for the most part. They have failed in some respects to carry out what he desired.

I am sure that Mr. Christie will be glad to go over the construction and plans of the Edwards Track and Field Stadium and tell you what you would like to know about it.

THE EDWARDS TRACK AND FIELD STADIUM, UNIVERSITY OF CALIFORNIA.

MR. WALTER CHRISTIE (Formerly Track Coach, Univ. of California): The subgrade of the track was a clay soil which was graded and rolled to a firm base; on the straightaways it sloped 4 inches away from the pole or inside curb, and on the curves it sloped to the inside curb paralleling the finished surface of the track. Three inch tile drains, laid in trench below the subgrade and surrounded with 1 inch gravel, collects the drainage. A complete drainage system carries away drainage from the track and field.

The track construction consisted of 5 to 6 inches of coarse rounded gravel from 1½ to 2 inch size, laid on the subgrade to facilitate drainage, then 5 inches of coarse, special clinker which were retained by screening on a ¾ inch square mesh screen on top of which was placed 4 inches of cinders which pass a ¾ inch screen and were held on a ½ inch screen; then on top of this was placed 2 inches of cinders which passed a ¼ inch screen, and then for a final topping, 2 inches of cinders and fine clay which were passed thru a ¼ inch screen mixed in about equal parts. The clay acts as a binder and provides a firm but resilient surface which the spikes of the running shoes will not disturb but will pull clean.

The curb of the track is 3 x 8 inch redwood treated with Columbia Wood Preservative. The surface of the track slopes away from the pole

or inside curb 4 inches in the 32 foot width. This keeps the lanes near the pole drier and therefore in better condition.

The runways for the broad jump, javelin and pole vault are constructed of a sandy clay, screened through a quarter mesh screen, placed on a rolled sub-base, six inches deep and rolled to a firm surface. There are no cinders or underdrain system below the runways. The runway for the broad jump is 4 feet wide by 140 feet long; for the javelin, 4 feet wide by 103 feet long, except at take-off where it is widened to a width of 12 feet for a distance of 15 feet, tapering off for a distance of 20 feet to the four foot runway; and for the pole vault, 4 feet wide by 135 feet long. The clay was obtained from pits near Fresno and is the same material as in the track construction at the Fresno State college. A clay with less sand than that used would be more desirable as it would pack firmer and harder. At the take-off the surface has been made firmer by the addition of a good stiff clay free from gravel and stones. Fire clay was used for this purpose as it was finely ground and easily applied, but other stiff clay is suitable.

The takeoff for the high jump is 40 feet wide by 60 feet long and composed of stiff, heavy clay from 8 inches thick at side away from the pit to 12 inches thick at the pit. The clay was screened thru a quarter inch mesh screen placed on a rolled sub-base and finally rolled to a firm surface. It was the desire to get a tough surface which would not be dug up by the spikes. The action of the spikes for a section opposite the bar is very severe.

The shot put and discus rings are made entirely of tough clay about 12 inches thick, the clay free from gravel or stone particles. Even under the best construction the rings cut up so readily that two rings for each event are provided.

The pit for the broad jump is 8 feet wide, 36 feet long and about 24 inches deep. An underdrain system around the edge of the pit, comprising tile drain was installed and connected to the drainage system of the field, three layers of cinders were added--the first layer about 4 inches thick, of coarse cinders (those retained on a $\frac{3}{4}$ inch screen), then a layer about 4 inches thick of cinders passing a $\frac{3}{4}$ inch screen and retained on a $\frac{1}{2}$ inch screen, and then a 3 inch layer of fine cinders passing a $\frac{1}{2}$ inch screen, and finally a layer of screened sand about 16 inches deep. No shavings are added. The sand alone gives a clean line of demarcation of the jumpers' foot prints.

The pit of the pole vault is 14 feet wide by 22 feet long. It would be desirable if it were 18 feet wide by 24 feet long. It is 3 feet deep and has a similar drainage system to that of the broad jump pit and is finally filled with about 30 inches of pine shavings.

We were somewhat handicapped in building the track on account of the Federal Land Bank Building being on the west side. Otherwise we would have had about an 80 foot wider track on the west side. However, we could not get the building moved. You know how it is with anything belonging to the Government.

I am mighty glad to have presented this subject to you and I thank you for that privilege.

Any questions?

Mr. Johnson: I would like to hear your explanation of why you first had the idea of building the stadium, especially, for track and field competition when you had that old track on which no other sport was run.

MR. CHRISTIE: Have you girls in your college?

MR. JOHNSON: Yes, it's co-educational.

MR. CHRISTIE: When the girls want anything they get it. We happened to be in a field that the girls wanted and we got out--and you will get out if the girls want anything you have; that is all there is to it.

We had the idea about the time, or in connection with the IC4A events, and we spent the money on it and it was worth while.

I want to say that the interest in NC2A is unbounded and you cannot tell what the attendance is going to be tomorrow and the next day. I wouldn't be surprised to see them turn them away.

MR. NICHOLSON (University of Notre Dame): What did you do to help the spectator more in this field than in the other field? That is the thing I am interested in.

MR. CHRISTIE: We got some things we asked for and some we didn't. I would like to see the stadium a little higher and the track harder for the spectator to get on it. I would like to see a closer connection with it between the two stands and a higher wind break at the north. Those are things that will probably remedy themselves.

This is just like a football game, or a baseball game--the people pay their money and they want to see. We tried our best to get the track so spectators could see the game. I think it improves interest in track. I tried, on the west side, to get the bleachers on a slant (i.e. set at an angle to the track.)

MR. NICHOLSON: Would it be better for the spectators if you didn't have this 220 straightaway?

MR. CHRISTIE: No, and I will tell you why. There is too much cheating on the lanes. That is, they will not keep their lanes unless you have five or six inspectors on the turns. I have seen records made going from the fourth lane to the second lane because the inspectors did not have guts enough to call the infringement.

MR. NICHOLSON: Don't you think it would be better for the spectator?

MR. CHRISTIE: No, I don't.

MR. JOHNSON: Wasn't your idea of having the stadium set at an angle to the track to enable the spectator to better see the start of the 220 and the low hurdles?

MR. CHRISTIE: Everything, yes. As it now is people will stand up and get in your way. It is essential that the stand be on a slant if you are going to attract and let the spectators see. That is why people stand up.

MR. YOUNG: How much of a slant is that?

MR. CHRISTIE: According to how much ground you have. That is the main thing.

MR. YOUNG: What is the length of the straightaway and the length of the curves?

MR. HAMILTON: I have that right here. It is 110 yards around the curve and 110 yards on the straightaway. The straightaway, the 220 straightaway is about 235 yards.

MR. CHRISTIE: I think that straightaway is a little longer.

MR. YOUNG: What is the radius?

MR. HAMILTON: 104 feet.

MR. YOUNG: I notice the curves are banked. Have you now, since you have used the stadium, come to the idea that that is a good thing?

MR. CHRISTIE: I think it is the only way to have it. Nobody can go around on a flat turn and get speed because your traction throws you out to the right. You must follow that body weight. Where the throw is the body weight will go.

QUESTION: I understand you advise the use of Fresno clay. After

heavy rains were you able to use your runways this year at all?

MR. HAMILTON: This field has an excellent system of drainage and there wasn't a day--and we had more rain this year than usual--that we weren't able to work on the track.

QUESTION: How about the runways?

MR. HAMILTON: We couldn't use the runways all the time. We used the track.

QUESTION: How long does it take the runways to dry after a good rain?

MR. HAMILTON: They will be dry the next day. If it rained in the morning they would be dry in the afternoon.

QUESTION: What do you think about mixing oil with that clay?

MR. CHRISTIE: I do not like it. It makes your clay powder. That Fresno clay is good--I will say that much for it.

MR. HAMILTON: There are one or two features about this track that are interesting. In the first place, everything is right out in front of the spectators' eye. They are the shot, discus, javelin, your broad jump and your pole vault. All the field events are out where the man announcing the Meet over this excellent loud speaking system can focus attention. There might be some criticism of the broad jump because it is well across the field. I think it would be better if we had the broad jump where the pole vault is. We can remedy that. The seats in the stadium are such that from any seat in the stadium you can see every lane of every race all the way around. You will appreciate that if you have ever tried to watch a track meet at the Harvard stadium where you cannot see the two or three men on the inside lanes at all. It is a beautiful place to watch a meet and it is, in very large measure, responsible for the increased interest that we have in track and field here in the bay district.

QUESTION: How are the prevailing winds here?

MR. HAMILTON: They are usually in the runner's face. Occasionally it whips around to the north and at their back.

This has been an excellent week. As a matter of fact, this has been the best track week--the last ten days have been the best track days that I have seen in my three years here at Berkeley, and I only hope that it will continue at least two more days.

QUESTION: What is the reason you have redwood curbings instead of those concrete curbings?

MR. HAMILTON: I think perhaps the redwood curb was put in experimentally.

MR. CHRISTIE: Yes, as a factor of safety.

MR. HAMILTON: It is sort of a safety valve. The redwood curb has been very satisfactory. We haven't had to replace a board. The curb is painted with an aluminum paint sprayed on. Concrete curbs are very expensive and, in our opinion, unnecessary. A good board curb is just as good. The board is treated with Columbia wood preservative and it is as good now as when put in. They will last at least 15 or 20 more years.

In regard to banking of the curves, Walter and I disagree some on that. I do not think it is necessary to have the pitch as great as it is on this track. It makes it difficult and expensive to keep up. I think the advantage of having this bank is over-emphasized. But it should at least be curved enough for excellent drainage.

MR. JOHNSON: You mean pitched?

MR. HAMILTON: Yes. I think our pitch is about 18 inches or two feet, isn't it?

MR. CHRISTIE: Yes.

MR. HAMILTON: John P. Nicholson, track coach of Notre Dame, is the inventor of the Nicholson Starting Block, which is the block most generally used in this country. He has a lot of progressive ideas on track and field besides the starting block, and we would be glad to hear from Mr. Nicholson at this time.

STARTING BLOCKS

MR. JOHN P. NICHOLSON (Track Coach, University of Notre Dame): The idea of starting blocks first came to me at Notre Dame in connection with our indoor clay track. We have a track of 8 laps to the mile and the track men came out about 4 o'clock and along in February it would get dark pretty early. When it came to running the sprints and hurdles, the boys would start digging their holes and, on account of that delay, we would not get through until around 6 o'clock and the boys would be late at dinner. I began worrying trying to figure out something to prevent the long digging and I figured out this idea of the starting block.

The whole idea, in the end, gentlemen, of these starting blocks, is not one of making the athlete run faster. It was an awful thing to me, in the old days, for the sprinters to be penalized a yard or two for a break and to see the men get up and dig holes, and piddle around and get their trowels and get a right angle, and get ready to run again. I have seen meets delayed as much as 30 minutes on that account. So the idea, is not to attempt to make a man run faster, but to speed up a meet.

There has been a lot of discussion as to whether these blocks make a man run faster or not. My own personal feeling is that I do not think the difference between good holes and the starting block will show on a watch. You know very well, for 100 yards, or any of these distances that you have to beat a man one yard in order to have it show on the watch. I am certain starting from blocks doesn't mean more than a foot. I doubt if it means that much.

To me the only excuse for the starting block is the speed with which a man can get ready for a race. For instance, with these blocks of mine, you can adjust the angle of the block; then there is the foot spread from side to side. You can get it out this way or in close (indicating.)

You can take these blocks and tell the runner to get ready to run, and in 15 seconds, if he knows how to manipulate them, he is ready to run his race. The block, in the end, is for the spectator and not for the athlete.

With these blocks the idea is, and it is very important, the speed with which adjustments can be made. That is the one thing we keep working on.

Now, a strange thing is this: You take a good athlete, a high class sprinter, and when he gets good--(We know very well that the International Athletic Federation will not allow a record made with blocks)--the first thing he does is to go back to the holes and it doesn't seem to bother him a bit. The experienced athlete can run, I think, as fast from holes as from blocks. Strange to say, the high school boy has benefited from these blocks more than anyone else. The reason for that is this; When you start from holes you come from a lower surface up to a higher surface and as you do you have a tendency to pull back; and we all know that the fundamental of starting is staying low for the first 15 yards and then zooming up like an airplane. With the blocks, as you start from the surface of the ground, it seems to throw you down and into your

stride. The school boy can learn to start much faster, but with the experienced athlete I see no difference at all.

Any questions?

MR. CHRISTIE: I think these starting blocks have served a useful purpose. We all know that not one high school boy in a hundred, in a high school meet, knows how to dig a hole. They even scratch the wrong way--the way they are going to run.

In my long career among athletes I have seen as many as 200 athletes have their front hole break on account of soft ground, and go through and the start is ruined. Haven't you seen the same thing?

MR. NICHOLSON: Yes. A man will dig a hole here (indicating) and another fellow will come around and will fill that hole in; and another fellow will come along and dig it here. I have seen many important race lost, by good men, in the hurdles and dashes because the hole when pushed against, comes out from under them, and down they go.

MR. CHRISTIE: I think it will take an athlete about two weeks to go from the holes to the starting blocks. With the holes your front hands are close to your front foot. With the starting blocks your feet are closer together and your hands further out. It will take you about two weeks to master it.

I would like to see this organization go on record as adopting the starting blocks and compelling their use, and forbid them digging holes on tracks.

MR. NICHOLSON: And make the Nicholson Blocks official. (Laughter)

The one trouble about my block is this: They cost too much. I have never had the nerve--I manufacture them in South Bend and sell them through Spalding's--to put out 1000 of these blocks. I have felt that I must first get the price down to around $5. I am going to try to work out something this year to get the price down so the school boys can have it.

As far as the other blocks are concerned, that is the single blocks, they are just as good as mine. Possibly one cannot adjust the angle as much, but I will put my blocks against any, for speed of adjustment, and that is what we are striving to obtain--to get the athlete off quickly and get the race going.

QUESTION: What about the difference in form?

MR. NICHOLSON: Suppose you have an athlete who knows how to run from holes. In coming to the blocks you must set the blocks further back. That is, say I am running from holes. (indicating.) Say, for instance that I was to get in blocks, then my tail would be up higher. In order to get back the same feeling that you have from blocks, all you have to do is to put your hands about three or four inches farther forwa In holes, you can get closer to the starting line than you can with blocks.

The one thing that the boys like about the blocks is the fact that they can always get the same feel. They can adjust the blocks exactly the way they want them, the same angle and distance apart. In my day they used holes and it was very seldom that you had those angles and the depth the way you wished them, and when you did dig it that way, you fel that you could start well. You can do it in ten seconds from blocks.

MR. PIPAL (Occidental College): We do not use blocks. The genera form is that the hips should not be higher than the shoulder. My experience is that when you use blocks they will have to be higher.

MR. NICHOLSON: Yes, a little higher, I will admit that. The

orthodox way is to have the back parallel with the ground from holes. Now your hands would be slightly further apart with blocks and your tail will be slightly higher.

MR. PIPAL: Couldn't that be overcome by hand blocks?

MR. NICHOLSON: Yes, you can do anything you please with it. But if you want to get away from hand blocks, just put your hands that much further forward.

MR. PIPAL: Do you see that you are losing ground when using hand blocks?

MR. NICHOLSON: Yes! We want things as simple as we can get them. I am against using hand blocks. (Applause)

MR. HAMILTON: Thank you very much, John.

At our business meeting, if it is the consensus of the group, we will take some kind of action or recommendation on these starting blocks.

MR. YOUNG: In connection with these starting blocks, the National Collegiate Rules now permit the use of starting blocks. It does not make them mandatory.

The afternoon session will begin at 2:00 in this room.

AFTERNOON SESSION

The Convention was called to order at 2:00 P.M.

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MR. YOUNG: If you will come to order we will start the afternoon session.

MR. HAMILTON: I am going to change the order of the program and call first on "Dad" Butler, of the University of Detroit. Mr. Butler has been coach of track at Detroit University for the past several years and prior to that time was at Oregon State. He has been a very successful coach over this long period and is one of the real authorities in the country upon the training of athletes. I know what he has to say will be valuable to all of us.

"Dad" Butler, of the University of Detroit! (Applause)

DISTANCE RUNNING

MR. M. H. "DAD" BUTLER (University of Detroit): I would like to ask a few questions and talk about distance running. I would like to know why we haven't more good milers and two-milers and where do we get them.

I have had a number of distance runners in my time, and they were very good at the time, and they were all farmer boys, with one exception, every one of them. They perhaps had four or five years in high school, but originally they worked all their lives and had a lot of foundation and stuff to start with.

There are a number of men here who have been very successful with distance runners and I would like to ask them where they get their men and what we can do to have more milers.

Thirty-five or thirty-six years ago they asked Mike Murphy what was the championship performance in track and he said 10 seconds for the 100; 22 for the 220; 50 for the quarter; 2 minutes for the half and 4:30 for the mile.

If you look over the record this year, with all of our dual meets, those records still stand with the exception of the sprints. There must be some reason for that.

This year, I suppose throughout the country there are 250 or 300 good hurdlers, and that many good sprinters, and I do not think there are 25 good milers. Is there anybody here that can tell us why, or whether we make the training hard, or whether we can not interest good boys in distance running?

First of all, I would like to ask Walter Christie to tell us what success he has had with distance men.

MR. CHRISTIE: I think the primary reason for bad distance runners in America is that the boys do not walk enough. They want to go everywhere in an automobile.

The success of the English is that their boys walk a lot and when they come to a mile run it is nothing to them at all.

I think we need more walking and a little more cross country; not so much of the speed of the cross country race, but to get the boys on their legs. I think the average kid rides too much in automobiles. I might humorously say that in the end the boy will develop a long back and short legs. That is my answer to why we haven't more distance men. The field is here and it should be utilized. Get the boys walking. I used to walk four miles to play a game of ball and walk four miles back.

In distance running we have to have a strong foundation and that means the legs must be developed to carry the burden.

MR. BUTLER: I am going to ask Clarence Edmundson, of the University of Washington, where he finds his distance men.

MR. EDMUNDSON: On the farm. I do not agree altogether with Walter Christie about the automobiles. I think automobiles have created a lot of walking. You ride into the country and hike in the hills.

I think we have more good distance runners than we have had in the past. My opinion is that the American people are not interested in distance running and do not enthuse over it, and, therefore, the kids do not.

Every man you have would like to be a 100 yard man and be called the fastest human being. As soon as you let a miler run a half, he wants to stay there; if he runs a remarkable quarter, he wants to stay there. Public interest created short distance running, in my opinion.

I think that distance men can be developed. As a matter of fact, I think we have better distance men than we have had in the past and I think we will have more of them. The reason we haven't as many as in the Old Country is because people over there like to see distance running, and come out to see it. I think that is the reason for the whole trouble. I don't know whether it will ever change or not.

MR. BUTLER: I am going to call on Billy Hayes--He has a number of good men and I want him to tell us where he found them.

MR. HAYES: They came from the country and have been boys without experience. I guess the main reason they are good distance runners is because it was a lot easier than the work they had been doing at home.

There is just one thing about distance running that is absolutely necessary, and that is the boy must like to run. Whenever you find a boy that has a zest for that work you can make a distance runner if you have him long enough. If you are trying to make a distance runner out of a green boy and it is a mental grind for him, you will never have a distance runner.

In most of the boys I have had, their foundation has been laid by running them across country and often changing the course. We have a lot of hills and do not run the same course daily, but switch from one to the other. Not many come out, but those who stay out are the boys that really like it, and that is their foundation.

We have had success in cross country, due to the fact that these boys really like it. When you find a boy that likes to run five miles, and then come in on the track and do his quarters and halves, you have a foundation for a good miler and half miler and occasionally a 440 prospect.

In our Big Ten we have several athletic departments not in favor of cross country running. That explains the reason for the lack of interest. They dropped the official Big Ten Cross Country Meet. We are invited to compete in the Central Intercollegiate Meet and carry on our long distance running without the official Big Ten Meet.

Right now I have some very good boys coming along. They are just kids without experience who like to do it.

I have found, over a long period of time, that when a boy can go through sustained action for 15 to 30 or 35 minutes, that he is of high calibre, and a superior boy.

Most of our boys do not like distance running, as has been said, because they like to be in the limelight and are more or less flighty individuals. Of course that does not apply to good sprinters and quarter milers that have natural ability. But these boys that go through

sustained effort in the long run have better health than the average of our squad. They are the best students on our squad and over the last 25 years have had greater success after graduation.

That is what I think of long distance running.

MR. NICHOLSON: I would like to have you fellows tell us how you work your men. Come on!

MR. HAYES: You cannot develop a long distance runner without running him. He must have a background. As I said a moment ago, the up and down hill hazard part of it is worth a lot. When you can get a man to run up a hill it is because he likes it. Some will turn loose and try to run down hill. But that problem of the hill is something that is tremendously important. Every time a man comes to a hill he must fight that hil; every time he comes to soft ground he must fight that soft ground, but fight it intelligently. He must become a keen student of conditions over any kind of footing.

The real basis of whatever success I have had with my men has been based on over-distance work. Why? Because a man who is worked over-distance will go through his event safely.

If you notice, a number of our men run two and three events and finish with no distress. They go through a season and they will be uniformly good in their performance and not crack at any time during the season. That is because the over-distance base was emphasized.

At the same time I pay particular attention to the development of the upper body with the idea that general strength is worth a lot to anybody. That enables the boy to withstand any kind of hazard that comes to him in the way of bumping, or being thrown off stride, or whatever may come up in the race. If he is forced to break stride it doesn't take much out of him; he can recover.

This upper body strength carries on, you see, after he finishes his collegiate competition. It comes from a lot of different things. I try to mix the program, and let them play basket ball, do pulley work and quite a bit of medicine ball, or apparatus work according to individual needs.

Every boy is an individual problem. I try to get him to realize that he has a certain amount of building to do and put that objective out in front of him as he develops and he gets a big kick out of it. When a boy is conscious that he is developing, that he is getting more general strength, then he has more zest for whatever he is doing.

After all, it is an individual problem. Many of you have good programs and have had success. I think possibly that I have just paid more attention to the over-distance part than a great many of you have.

MR. NICHOLSON: Your men do repeat. For instance, Lash ran a mile in 4:14 in the Western Conference and came back and ran a two mile in 9:17. He has been doing that right along. These boys are strong.

I would like to know how you work your boys. Take Lash, how would you work him on Monday, Tuesday, Wednesday, Thursday and Friday?

MR. HAYES: Well, I will tell you, but you do not have to do it this way. You want to remember that he has had a background. Throughout the winter on one day, Monday or Tuesday, I gave him over-distance work and that over-distance work was three to five miles.

MR. NICHOLSON: How fast?

MR. HAYES: For him it was somewhere around 5:10 to 5:20 clip per mile. He is a good 10,000 meter man. That was his running for Monday.

Tuesday I dropped him down to speed work and he ran quarters and halves mostly.

MR. NICHOLSON: How fast?
MR. HAYES: He cannot run a quarter fast. He is gradually picking up speed. Those quarters are run around 60 to 65, and then a little later, of course, in May, trying to get down to 57 or 58.
MR. JOHNSON: How many quarters and halves did you run him that day?
MR. HAYES: He started out with the 880 first. The reason I start with the longer work first, a half mile, say in 2:10, and then a quarter about 10 minutes later is not to give him a chance to fully recuperate. This emphasizes speed-when-tired.

I give him the assignment this way for the 440; say 32 for the first 220 and 30 for the second 220, and then in about five or ten minutes I give him another quarter; and this next quarter will be possibly 30 for the first 220 and, if he can make it, 28 for the second 220.

Why do I do that? Because I am teaching him to overcome fatigue. That always comes somewhere, doesn't it? If you get a man to run a little faster when fatigue is coming, that is the thing to do. You know how often he fights through it. Your problem is to get every man to recognize the symptoms of fatigue. They come to men at different times and then he fights through that stage, and he doesn't fight through it by slowing up, does he? He fights through it by going on. If you will check on your European runners you will find that is the way they do it.

You will see a man speeding up at various stages in 10,000 meters. Why is he doing it? He is fighting off fatigue.

After he has had those two quarters I may give him a 220.
MR. JOHNSON: If he can stand up.
MR. HAYES: It would amaze you--they don't bother him. The reason I say you do not have to do this--or don't do this--is because you won't have men with that background behind them. But think of all the miles he has run to get that background. He enjoys that.
MR. NICHOLSON: What do you give him on Wednesday?
MR. HAYES: On Wednesday I come back to fast pace work--a mile and a half, in approximately 7 minutes.
MR. NICHOLSON: Any other work besides that?
MR. HAYES: When he finishes his mile and a half I give him a quarter, and possibly a 220, using the same system. The first 220 of the quarter is not quite as fast as the second 220 of the quarter. You cannot do that with everybody. If that is too much of a grind, do not do it; you should keep the boy's spirits up and always make certain he recuperates and is fresh next day.
MR. NICHOLSON: What about Thursday?
MR. HAYES: On Thursday, if we have competition on Saturday, then I go back to over-distance work, slow over-distance work. I may run him two miles and a half. It doesn't take much out of him.
MR. NICHOLSON: What about this boy Hobbs? He is not as strong as the type you are mentioning. He is getting stronger, but is he able at all to come to that program that you are giving?
MR. HAYES: That boy, Hobbs, has everything it takes to make a runner, except the determination. Distance work grinds him, but when he really wants to do it, he has more ability than Lash and once in a while he will lick Lash. But he cannot stand sustained work.
MR. NICHOLSON: Can he stand this double workout that Lash can stand, or do you think he cannot because he hasn't the will to stand it?
MR. HAYES: He can stand them for a month, or something like that, and then you have got to change them because he gets tired; not physically but mentally.

MR. NICHOLSON: I seem to be doing the questioning here in place of "Dad" Butler. I am the interlocutor because I am interested.

I know that "Dad" Butler has turned out some good distance runners and I am going to ask him how he works them out.

MR. BUTLER: At Oregon we had a chance to run outside but in Detroit we haven't that opportunity. In the fall I am busy with football and basket ball; I start my track men after the first of the year. I never had two boys alike. I do not run two that are good against each other.

MR. HAYES: That is right.

MR. BUTLER: They do not know who is the best boy, I try to run them in different races.

I do not agree absolutely with Billy Hayes in one thing. Years ago when I was running professionally we did the very things he does. We always trained on the hills. We would run up to this tree or that tree. It might be 220 yards, it might be a quarter of a mile or seventy five yards, but always up-hill.

When I started training boxers, among them five or six world champions, I learned a great deal about conditioning men. One of them was a small fellow, Kid Lavigne, about five foot three inches. He licked everybody up to Fitzsimmons. That was quite a job. When they fought twenty or twenty-five rounds as they did in those days, it required a great deal of work.

In those years of conditioning we found out a great deal. Years before we used to run men on the road ten miles; that is, run and walk; run a quarter and walk a quarter. I found that by giving them five or six miles with a little more speed and a little more running up the hills, we developed a wonderful lot of strength.

(Mr. Butler continued to relate his experience in the training of boxers and the importance of running in their development program.)

Now coming back to the question asked, how the boys are worked, I like to give them about five weeks of jogging. I never put a watch on them for those five weeks.

This year I had Daly, Quaid, Hamilton, Ryan, Bolog and Scott. I wanted a distance Medley Relay Team. I had two men but I did not have the others. The other men were quarter milers. I told them they had a chance to go to the Drake Relays.

This comes back to Billy's over-work again. Those four boys were quarter milers and two of them were good ones. They all tried to run the half mile because the two quarter milers were so close together they did not know who might get the call so they took a double shot at both the half and the quarter.

Of those four boys, three of them ran in 1:56, the other in 1:57.

That extra jogging work, jogging the same distance as the other men gave them the foundation and made it possible for them to run a good half.

After that five weeks I get out my watch and commence to run my boys to what I think they can do. If it is a five minute boy, why I just divide my quarters even, if a four-thirty, I divide them even, if I want to run four-twenty, I divide them even. I will run them quarters only.

MR. NICHOLSON: How far apart?

MR. BUTLER: Daly has run in three races, three quarters against Cunningham, and he ran two one mile races against him. I think only on two occasions have I run him three quarters of a mile. I run him a half mile at the pace I expect him to run the mile.

MR. NICHOLSON: Now "Dad" you have taken us up to Tuesday. How many of those quarters will you run him and how far apart?
MR. BUTLER: As I understand it, you are speaking of Daly now? I will run him quarter miles a little faster than the pace I think he will have to run in his races, because if he is carried fast it will not hurt him, and I will run him another in from ten to twenty minutes.

If it is cold I can not let him stay out there and freeze. I have to keep him warm, and maybe I will run him a little sooner than that, but two of those quarters is all I will run him. The main thing I try to impress on the boys is the importance of pace. For instance in this race this year, by running those quarters a little faster than he was asked to run in a race, Daly ran well against Cunningham and Venzke. Venzke set a pace and he came by the half in two minutes flat; when I looked at my watch and heard the timer holler two minutes, I nearly fell off the bench I was sitting on, because I thought that was a good half. I wondered if Daly could go another foot. When the gun was shot for the last lap Daly tried to pass both and we could not tell who won until it was announced; it was that close.
MR. NICHOLSON: What are we coming to? Here's a man who gets results by one method and we have another man obtaining results using another method.
MR. JOHNSON: This is interesting. Mr. Hayes has developed his men through over-distance work and "Dad" Butler has got his men in top shape by teaching them pace. Brutus Hamilton, as I understand it, is an under-distance coach, so to speak. Should we not hear from him?
MR. BUTLER: Brutus had Cunningham for two years, and we might hear from him.
MR. HAMILTON: I think, so far as success in distance running is concerned, that Mr. Hayes and Mr. Butler have, over a long period of years, proved their right to the honor. I haven't.

As I have listened to this discussion many things have struck me as important. There is one thing that we certainly ought to follow and that is that both men know exactly what they are doing. They have their plans well made and they follow them and they are successful in them. Mr. Hayes knows what his boys are going to do, and he has a well organized plan. So has Mr. Butler.
MR. BUTLER: What did you do with Cunningham? You had him the first two years.
MR. HAMILTON: Cunningham is a runner that doesn't need a great deal of attention except that you want to be careful not to spoil him. That is, you do not want to ruin him. The condition of his legs is such that he has to have a rather unorthodox schedule. He never did any over-distance work. He did quite a bit of over-distance work walking, but never over-distance running. Seldom did he run anything but a 660, and very seldom did he run in track shoes. When I had him he ran mostly in heavy basket ball shoes because of the peculiar condition of his burned legs.
MR. BUTLER: He is doing it yet.
MR. HAMILTON: Cunningham knew pace. Cunningham's whole secret is rhythm, and to get it set and keep it going. I think more distance races are lost in the first quarter than in any other place.

I do not know the field in the mile here, but I venture to say one man at least will go out around 57 seconds for his first quarter. The first quarter of any miler shouldn't be any faster than 62.5, in my opinion. I do not know whether you agree with me on that or not.

But the thing is to run the first quarter with relaxed, easy rhythm, and establish a rhythm and go through the second quarter maybe a little slower.

In Cunningham's case he runs the first half mile conserving all energy possible, to establish a rhythm to get the organs functioning, and then he reduces the race to a half mile. That is all. When they say, "Two more laps to go," he tries to say, "Well, that is past. Now I am running a half mile race," and that is what he does. When he is running well, in 4:06 or 4:07 miles, he runs 2:06 the first half and approximately 2 flat for his second.

I think the first half of all races is too fast. There hasn't been a single 4:10 mile to my knowledge run, or better than a 4:10 mile, where the second half of the race hasn't been faster than the first. I think the first half of the half mile is too fast in most cases.

I might say a word about California distance runners. We have some here at Berkeley. We have some boys that will show in this meet. California distance running is coming up. Unfortunately for me, it is mostly at Stanford, Fresno State and U. S. C. where they are coming, but we do have here at Berkeley one excellent two-miler, a boy by the name of Bob Fowler. He was undefeated on the Coast. He is a runner who will give a good account of himself in major competition. He has run 9:31 in the two mile and I am sure that he can run 9:20 any time that he is pushed and feels right. In his two mile race his second mile is always faster than his first.

MR. JOHNSON: What about his training schedule, say about the middle of the season, about the first or middle of April?

MR. HAMILTON: The middle of April would be near the end of our training season and our boys would be in pretty good shape.

To begin with, we start in the fall; we work in the fall some, not only with distance runners, but with everyone else, except maybe the outstanding varsity men who are juniors or seniors, and who might be a little tired from too much activity. But all of our distance runners work in the fall and that is when they do their over-distance work.

We have cross country running. Unfortunately, we do not have a good course here. But we do some cross country work; not too serious, however, because there is no regular schedule. We have inter-class races, and so forth.

Fowler does quite a bit of cross country work. In the spring we start right in and he does a lot of speed work, a mile and a half, but never anything over two miles. He never does two miles on the track. He does quite a few half miles at a two-mile clip, 2:18 and 2:22. He will do one of those and rest; do another one and rest, and then maybe do another one.

The thing, I think, you ought not to destroy in a distance runner is this athlete-beyondness. You want them to feel that they can go on a little bit more. I never like to see a boy all out. It is a mistake to over match a boy early in the season. I would like to have him feel that there is an unplumbed depth in his makeup that he hasn't called on yet. So far, Fowler feels that way.

MR. HAYES: An interesting thing last week at Princeton, between Lovelock and Cunningham, was that the two boys knew that the other was his competitor in that race. Lovelock had said that he was going to run away. Cunningham, I am sure, had in mind that he would set the pace. I talked to Cunningham before the race. There was quite a contrast.

Do you know what Glenn set his first quarter?
MR. HAMILTON: 64, he led the first quarter.
MR. HAYES: No, Dawson led out and it looked as though Glenn had made a mistake; that Dawson was setting about the right pace the first 220, but slowed up too much on the second 220. Glenn didn't lead out until right at the end of the first quarter. He ran his second quarter fast, 60 and a fraction. Lovelock, ran to the outside of Cunningham, where he could watch him. He was just about a half stride behind Glenn and ran in that position until the last lap. Lovelock was in wonderful condition and had a tremendous kick on his sprint, faster than Glenn could run on that last 220. Have you seen Lovelock run?
MR. HAMILTON: Yes.
MR. HAYES: His change of form, when he put on that kick, was decided. He didn't use his arms in the body of the race, but when he went out he looked like a sprinter and he came in well within himself.

In his methods of training you have something that is entirely individual. While at Princeton Lovelock went swimming practically every day after his workout on the track. He said, "If I couldn't have some fun I wouldn't run at all." He had a lot of fun but he did a lot of work under fine weather conditions.

You know how the English train--they run everywhere. Well, Lovelock did some cross country work and then came in on the track and did his pace work. On quarters, six sixties, half miles and three quarters he did a beautiful job of timing his pace.

The other contrast is Neilson, of Denmark, who was there for the 2 mile. He was wearing heavy shoes and out running around in the woods all the time and hardly ever showed up on the track. His world's record for 3000 meters at 8:18 had everybody scared to death. He was a fine-looking boy, but very lonely because nobody talked to him in Danish and he could not speak English.

There you had Lovelock and Neilson and, of course, Neilson failed to finish the race. When he left the track he said he couldn't breathe. It was very hot and I presume that was a good reason for his being unable to adjust himself to the pace. In the two mile race our boys went out fast, very fast, on the first part of the race and he went out very slow, and got far behind. On the first lap I think they had 25 or 30 yards on him, and after the second lap they had twice that much, Neilson continued dropping back; then, when he tried to speed up his pace he was in great distress and could not adjust himself to the atmospheric conditions. But he looked in good condition and everybody was afraid of him because he had spent so much time running cross country and had been on the track only a few times for pace work.

There you have a very decided contrast in performance of the European runners.
QUESTION: Does Lovelock run the Finnish style, or on his heels?
MR. HAYES: No, he runs up on his foot about the same as our middle distance men. Don't you think that Glenn's vitality, strength, endurance, heart and lungs, have an excellent background of work?
MR. HAMILTON: I think one of the strongest in the country.
MR. HAYES: My impression of him has always been that he has tremendous vitality; and, of course, in addition to that he has the mentality and a determination that he won't be licked. Then, he can think on the track while he is running. That is what a lot of the boys cannot do. When they are on the track, and fatigue begins to come, they can not think in action. Glenn can think; that is a great asset with him.

MR. HAMILTON: Yes. There is no substitute for running for condition. If there was a substitute boxers would have found it long ago, because they hate road work.

MR. BUTLER: Over the air we heard the announcer at Princeton say that the heat affected the men. I cannot believe that. By that I mean this: In running years ago I ran in Montana and down in San Luis Obispo, and Santa Maria, and Paso Robles, and it never made any difference. I do not think that it would make a fraction of difference myself.

What do you think about that?

MR. HAYES: Some long distance men are bothered by the heat. That is, in a race over a mile. In a race under a mile I do not think it bothers them at all.

The strange thing there was that prior to the meet everybody was lying around like most of our boys do before a big meet. You know how they do, just conserving energy. But this fellow, Lovelock, is just naturally active. Any of you who have been around Princeton know what an alumni parade is--it is one of the greatest things you have ever seen. Thousands and thousands of them march in that parade. They have all sorts of banners and crazy equipment in the way of clothing, and so forth. This fellow Lovelock was out there in the sun taking pictures of that parade, while the other athletes were protecting themselves from that sun and most of them lying down.

Of course, I thought Lovelock knew his business. But I couldn't understand why he would be out there in the sun taking pictures and standing on his feet. He was going to race at 5 o'clock in the meet. They were on eastern daylight saving time and 5 o'clock was pretty hot in the afternoon at that particular meet.

Although Neilson protected himself, the heat did bother him. He was in distress before the race.

But Lovelock paid no attention to the heat, except that he wore a little straw hat. The remarkable thing to me was that he seemed to enjoy it. The heat seemed to agree with him.

Neilson, on the other hand, at the first half mile was in great distress. The other boys stood it fine. I do not think the heat bothered them.

Perhaps you have been around Denmark and the Scandinavian countries. I do not know why Neilson should have been in such great distress due to the heat.

MR. NICHOLSON: In Stockholm it is hot.

MR. MOORE: Take down at the Mississippi A & M, what do you think about training those boys down there in that heat compared with the cool weather in Indiana? Do you think the boys down there would improve if you had them at Indiana?

MR. HAYES: I doubt that. I think I could have better distance men at Mississippi A & M than I have at Indiana. A good course to run over is a very important thing. I think you would have a hard time finding a good course at I. S. U.

MR. MOORE: We haven't any.

MR. HAYES: We can vary it. You come down and run on our hilly course and you know it is hard for the other team. But as far as the weather is concerned, you would have no more difficulty at Mississippi A & M than at any other place. There you have the hills.

MR. HANNER: In Uteh there is a 4700 foot elevation. What effect does that elevation have on distance runners?

MR. BUTLER: It didn't make a bit of difference to me, nor has it made the least bit of difference with the fighters.

Corbett said this: That a great deal was being said about mental psychology & physical psychology; and that mental psychology backed up by physical fitness was the ideal condition. That is the answer.

The boy has got to make up his mind that there isn't any such thing as a difference in heat. For instance, it was said that Lovelock was just sure of himself. The chances are that he was sure of himself and he just played around. But for one second had the thought entered his mind that he couldn't do it, and he would have been down.

MR. PIPAL: Don't you think walking around and taking pictures took his mind off his troubles and caused him to relax?

MR. BUTLER: Yes. Send your boys to the picture show to take their minds off what they are going to do.

QUESTION: In regard to cross country work, road work, we cut that out on account of lack of dirt roads. There is nothing but pavement and we find running men on pavement hurts them instead of helps them.

MR. BUTLER: You have to run on the track, of course.

In England, those roads are probably 100 years old or more, but on the sides they are always cut; that is, the grass is cut to feed the sheep and cattle and it made a fine place on which to run.

QUESTION: Do you have any definite method you use for warming up?

MR. BUTLER: Cunningham is a good example for that. He runs four times as far before he gets ready to run as he does during the race.

If we would let the boys lie on the floor and pedal the bicycle, or something where they are not using their upper body, they are going to be better off.

There are no two boys alike, and that is the whole problem.

I think we have about a couple of minutes more and I would like to hear from Karl Schlademan as to what he thinks about the long distance runners, why we do not have enough of them, and where he finds his.

MR. KARL SCHLADEMAN (Washington State): I find them out on the wheat farms and in the hills up in Washington. I haven't had a really good boy since I have been there. I have a couple of fair ones. Practically all of the kids up in that country do a lot of hiking out in the hills. It is a long way out to the mountains and you have to have automobiles to get them out there. After they are there they do plenty of it, up and down mountain climbing.

I believe that the Northwest has a lot of good distance runners and will produce more because of the ruggedness of the country up there.

We had a lot of fine kids back in Kansas, but nobody that would equal Cunningham. But we had some good men there, as Brutus Hamilton will tell you, and he was at Missouri competing against us. Those boys were all off the farms.

I have been thinking since this discussion has come up, and I have never had a city kid that was a runner. There is an exception over at Montana. Gillette was from Butte. But you know the type of country around there. He did a lot of going up and down work.

MR. BUTLER: In the city of Detroit there are about a million and a half people and I do not think they have five good runners there.

MR. GORMAN: In regard to our lack of good distance runners, as has been brought out here today, I myself believe we have better distance runners now than we ever had before. There is no doubt about that in my mind. And more of them. Don't you think, if we took care of these boys, and they keep on running until they are 25, 26, 27 and up to 30 years old, we would be as good as the Europeans?

MR. NICHOLSON: That is the whole problem.

MR. GORMAN: We quit too soon.

MR. BUTLER: Ralph, you have twelve distance runners, mostly freshmen, and I suggest that you tell us about them and where you got them.
MR. YOUNG: Success begets success. In the last ten years we have had good distance runners. As a result we have boys who can not run and who will say, "I will go out and see what I can do."

As a good example of what I am talking about, I remember our inter-class cross country run last fall. We had a freshman there who had never run before and he ran in this meet. We eliminated some of the varsity men, of course, from the meet. This fellow finished about sixth or seventh. As he ran past the finish line, one of the judges ran down the track and went up to him and said, "What is your name?" He said, "My name is Jones, " and stuck out his hand and said, "What is yours?"

You talk about dumb distance runners. Maybe that is the reason. This fellow had never had that experience before of having anybody running up to him asking what his name was, but he got out there and tried. That fellow will keep on coming and probably in another year or two will be on our team.

I think the whole thing comes back to our environment and the way we Americans live. We want something and want it in a hurry. We want the dessert before we have our meal; we want to get in our car and go 60 miles an hour, and when we get there we have a lot of time to spare, but we are in a hurry to get there. We go to a movie and we sit there for an hour and 45 minutes, and if the picture isn't over we begin to wiggle and squirm around and we get up and walk out. You go to a double-header ball game and you get up and walk out before it is over. We want things done in a hurry. We haven't the patience to wait for anything.
MR. BUTLER: That is about all we have time for. Thank you very much. (Applause)
MR. HAMILTON: I think this discussion could continue indefinitely, but we have to hurry along. We appreciate it very much.

As I see it, the gist of the whole discussion on long distance running is that while most of the long distance runners come from the farm or from rugged training in their youth--we should take them where we can get them--and all the coaches here who have been successful over a long period of years in training of distance runners have had well organized and well planned schedules of work for their boys--some over-distance and some under-distance--and all of them believe in a lot of running.

We have discussed long distance running in our coaches' meetings before and I think, with these few remarks by various contributors here, we will close this discussion on long distance running.

We have an open forum for the next few moments and Mr. Karl Schlademan, of Washington State College, will take charge. You can shoot the questions at Karl and he will ask one of the Western Track Coaches to answer the question if it can be answered.

Karl, will you step up and take charge? You men can be thinking of the questions you would like to ask.

OPEN FORUM

MR. SCHLADEMAN: The meeting is now open for general discussion--the open forum.
QUESTION: What about the merits of an aluminum pole over a bamboo pole?
MR. SCHLADEMAN: The aluminum pole is a fine thing for a big man, but for a little man it isn't so good. I still cling to the bamboo pole. What do you think about it, Brutus?

MR. HAMILTON: The Big Ten, I believe, use the aluminum pole almost altogether. Few men in the Big Ten use the bamboo.

I think that we were unfortunate here in California in that the first aluminum pole we bought didn't have much zip to it, much spring; consequently, our boys don't like it and don't use it. I do not believe the U.S.C. vaulters use it. There will probably be some aluminum poles used at this meet, however.

Even the aluminum poles vary somewhat in their spring. If you happen to get one that suits the boy he will be crazy over it for a long period of years.

Mr. EDMUNDSON (University of Washington): I want to bring something to your attention which may be a helpful suggestion to you.

I know we have all had trouble with the discus ring. Practically everywhere I have been I have noticed the same thing prevails. I mean that your discus ring tears up easy when you have a man pivoting in there. You also have trouble with runways and the high jump takeoff.

A few months ago we had, from the University of Washington where I coach, a man in the chemistry department give a talk on the new industries that might be developed in the Pacific Northwest. In that talk he mentioned a by-product from the pulp mills. He said that they were using this adhesive as the adhesive on some of the roads, instead of oil, in certain counties in Washington.

We had tried oil indoors in our field house in a spot or two, to see what effect it would have on the dust. It was very dirty and greasy, of course.

I went and talked to this man about my problem and he gave me an address where we could get this material, this by-product from the pulp mills. Whether it has a trade name or not I am not sure. It is called "Pulp Liquor" and should be obtainable at any paper mill.

We had no difficulty in getting this product by writing to one of the pulp mills in Sheldon, Washington. We used it first a year ago and we had to experiment ourselves with it because it was a new proposition. It didn't cost us a cent to get it. When we told them that we wanted to experiment with it on the campus they sent us several barrels of it. We used it on the cinder ring for the discus, and on our high jump takeoff. The material there is a composition of clay and cinders and it is hard to get a good takeoff in the high jump, especially where you are liable to have some damp weather. This helps turn the water; it helps shed the water so it drains off the surface readily.

When it is first put on we have had to mix lime with it. Our success with it has been most satisfactory to me. You will find, if you use this, that after it sets a while it gets hard.

You have noticed the roads where they are oiled and where, later, they use an instrument like the back of a large rake, which brings the stuff up, loosens it up, and they roll it and immediately the road is in pretty good shape again.

So, in using this material about which I am speaking, if it gets hard just take the back of a garden rake and rake it up, loosen it up and then run a hand roller over it and it will be of the right consistency for the spikes to go in.

We used this on the discus ring, the high jump takeoff and on the runways for the pole vault and the broad jump. We had quite a rain the night before the Conference Meet, and our track and runways were in good shape. The coaches there were all interested in this particular material.

MR. NICHOLSON: What does it look like?

MR. EDMUNDSON: It looks like molasses. It is a dark, sirupy composition and it has splendid adhesive qualities. It doesn't last through the winter. We put some on a year ago and I could see no evidence of it this spring when we came out. But the fact that it is inexpensive, and you do not need to use it over a lot of surface, makes it, I would say, an economical thing to use.

QUESTION: Do you pour it over the ground, or how do you apply it?

MR. EDMUNDSON: We had to experiment with it. It is rather a new proposition. The kids pour it on the ground and rake it in. I advise using it sparingly at first and add more if necessary. It is easier to put more on than it is to take it off if it is too thick. It will harden, but you can rake it and then roll it and it is good again. It is soft and pliable and still it is tough.

MR. NICHOLSON: What do you think about putting it on the running track, would it cost too much?

MR. EDMUNDSON: It might. The chemistry professor suggested this year that we use it on a part of the track. The thought was that some of his students might want to work on this in connection with a research paper for graduation, but apparently none of the students there was interested in it, because I have heard nothing more from it. I would have been glad to have had them do it and maybe in another year they will. It makes a good fast track. I don't know how it would be over the entire track. I would monkey with a smaller section of it for a while at first. But I think near your starting point of the 220 you could go back a few yards and put some in and try it out. That would be my preference in the matter.

MR. NICHOLSON: Do you think it would make a track too hard?

MR. EDMUNDSON: It could, yes. That would be a lot of surface to cultivate. It takes garden work. You would have to rake it.

That is all I have to say on that matter.

MR. SCHLADEMAN: I am sure that will bear investigation. From what I saw of it at Washington at the time of the Conference Meet there it struck me as the first thing I have seen that may be a solution to this wet runway proposition.

MR. YOUNG: I notice we have a new type of javelin here (indicating). I wonder if we might ask Mr. Pipal to tell us something about it.

MR. SCHLADEMAN: We would be glad to hear him. I know I know nothing of it myself.

MR. PIPAL: I appreciate the opportunity to show this. (Indicating new type of javelin point)

The idea is to have a javelin point which really has two collars. One collar here, and there is another one that goes further back about three inches and it is a little larger. It is a stream line idea. The principle of the thing is the protection to the shaft, almost 75 per cent, that is, the breakage. The idea is this, that you can break a thing over one knee much easier than you can over two. That is the whole idea of the thing.

This is just an illustration. I haven't the finished product to put on the market. I am trying to interest javelin manufacturers in it. So far I have not been very successful because they get paid for the javelins they sell. If they do not break, of course, they do not sell so many.

Anyhow, I have used this now for two years and I am satisfied that, certainly if for no other purpose than for practice purposes, it does reduce the cost.

I haven't put this on the market yet. It is not a finished product. I hope some day to have it on the market.

Now, gentlemen, while I am on my feet, and inasmuch as I was told that I would probably be asked to say something, I am going to say something about my experience in locating and looking for athletes, not in high schools or finished products, but in locating undeveloped material. I though you people might be interested in some of the methods that I am using in locating prospective athletes, track men.

I want to say that in the big universities you people need scouts to look for athletes on your own campus. You have a lot of athletes that are absolutely neglected. You have spent a lot of money, time and effort trying to stimulate interest to get the finished product. For every one of those ready-made athletes that comes to your university you have at least ten in your institution that are neglected, undeveloped.

I want to tell you my experience of how to pick a track man. In the first place, my feeling is that the simplest and fastest way to discover whether you have a track man on your squad is to find out if he has any spring in his legs. One of the easiest ways to do that is to have him high jump. If he has good high jumping ability then there is some chance that he is going to be a track man in some line.

I tell the boys at Occidental College, these boys that take no interest in athletics, that if they will come out in one month I can tell them whether there is any chance for them to make a success as a track man. I claim I can do that. One of the best tests is to find out whether he has high jumping ability. He must, of course, have legs long enough and, above all, he must have a considerable lot of intestinal fortitude. He must have fairly long legs, I mean at least half of his whole height. Those are the two simple things--his spring in his legs and good build.

Here is another test: If you have a boy who wants to know whether he can do any long distance running, if he has a slow heart there is some chance of his being a distance man. If he has a fast heart there is not much use trying to make a distance man out of him. He won't enjoy long distance running.

Those are some of the things I thought you might be interested in. (Applause)

MR. SCHLADEMAN: Brutus, I noticed something, when you were at the dual meet, about Mackey (Cal.) and the shot, carrying the thing clear out away from the shoulder and putting in a hurry. I am wondering just what the reason was for that and what you have to say on that subject.

MR. HAMILTON: Mackey carries the shot out here (indicating away from the collar bone or neck) for this reason: Did you ever lift a heavy sack of wheat in the end gate of a wagon? If you have, you know how you start and keep on going up. It is a little knack in timing. You start and then you sort of settle and then go on. You do that to sort of reduce the weight of the wheat. (Indicating) You understand what I mean by that if you have done that kind of work.

Mackey holds the shot out here (indicating) with the expectation and hope he can, by letting that shot sort of drift, pick it up in here and reduce the 16 pound shot down to 13-1/3 or something like that.

MR. SCHLADEMAN: I noticed the way he held the shot out here and when he got into the ring he started right out. I had been wondering about it, whether it was something new, as I had never seen anybody work like that before. You think it is a question of timing?

MR. HAMILTON: Yes.

MR. NICHOLSON: Can he keep the shot in his fingers that way?

MR. HAMILTON: Yes.

MR. SCHLADEMAN: I want to ask Mr. Hanner a question: In holding the javelin against the second finger, as was demonstrated this morning, is that the actual final delivery, over the second finger?
MR. HANNER: Over the second finger.
MR. SCHLADEMAN: This (index finger) merely backs the second finger up?
MR. HANNER: Yes.
MR. SCHLADEMAN: If there aren't any more questions I will turn this meeting back to Brutus Hamilton.
MR. HAMILTON: I want to thank Mr. Schlademan for leading this discussion.

Larry Snyder is the coach at Ohio State University. I know he has a very fine team. Jesse Owens is only one of several fine boys that he has. I have a great amount of satisfaction and pleasure in introducing Larry Snyder to you and having him talk about Jesse Owens. (Applause)

RUNNING AND JUMPING METHODS USED BY JESSE OWENS

MR. LARRY SNYDER (Track Coach, Ohio State University): I know all of you would like to have had an athlete of Jesse's calibre laid right in your lap the way I had. You would have been willing, I think, to coach him as I have been willing to do. And probably a lot of you could have done a better job with him than I have done.

Let me say that Jesse Owens is a great boy to work with. Did you ever have a champion who would take your every suggestion and was willing to try it thoroughly; and one who, if you needed five more points in a track meet was willing and able to go out and get them? Jesse Owens is just that sort of a boy. He is just perfect from the coaching angle.

I have coached a few boys who were very, very good, but who were not easy to coach. They thought they knew how to do things, even before you told them, and you had to work in a very roundabout manner with them, finally letting the idea come to them as their idea and then it was good.

Jesse Owens lets me tell him and then he tries to put it into practice. He is so well coordinated that even a radical "form" change in starting, or any other phase of running, becomes a part of his style after a very few practice sessions. I do not know just what you would like to hear about Jesse. Possibly I should talk about the broad jump first.

You know how good he was in high school (24ft.8in.), and you know what he has done since (26ft.8¼in.). I have a feeling, and I think a lot of you have, that in the broad jump we don't want the man to quit after he leaves the board. We want him, in some manner or other, to work and work hard until he hits the ground again.

I feel that the running hitch kick is one of the best ways to get greater distance. Jesse instinctively just picks his legs up and soars. And so, as a freshman, taking a leaf from my own book in learning the hitch kick method of jumping, I had him practice hopping on the grass, and in hopping he finally discovered how to get his body in position so he could work his legs, found out what muscles came into play in order to get his legs to work. But we also found that it didn't add a bit to his jumping distance. We worked on it while he was a freshman, and again last fall, and he was able to get over 25 feet with that style. However, we found that for his better jumps he apparently gets into an easier position, a harder driving position, when he just picks up his legs and carries them in the air. The distance that he gets is due, I feel, to his terrific speed, in the first place, and to his beautiful spring. He will continue his out-of-season practice with the hitch kick style and I firmly believe that it will become a part of his broad jumping style before another year is past.

Jesse has high jumped, 6 feet 3 inches, so you see where his spring comes from. His coordination enables him to get the maximum distance out of his jump after he leaves the board and his speed down the runway does the rest. He does it in a very free and easy manner and apparently it isn't hard work for him at all.

He jumped, as you know, 26 feet 8¼ inches on his only trial at the Big Ten Meet. He jumped from a grass runway. He took only one trial on Friday and jumped 25 feet 3 inches. On Saturday, he again took only one jump and broke the world's record by six inches. Later in the year he again broke the former record at the Central Collegiate Meet.

There is something in the makeup of this boy that we have never seen before. He was just born with it. Trying to keep him in shape, I feel, is the biggest thing I can do; I get him ready for the meets--he does the rest. His sprinting start in high school was very poor. He was good enough that he didn't need to worry about the gun. In fact, he never paid any attention to the gun. He would get set and when the rest of the boys left then he would leave, feeling he was good enough to beat them after they got away from the mark. That has been the hardest thing to overcome in him. He just unconsciously looks out of the corner of his eye down the lane and watches the other sprinters. It has been a tough job to get him to focus on the gun so he knows when the race is supposed to start. He forgot that last Saturday and got off to a poor start in Southern California. However, in the five or six meets prior to that he has been starting very well. Whether or not he is going to run any faster than his 9.4, which has done twice, I don't know.

The champion sprinters are just about the same for 60 yards. Whatever amount he can cut off has to be cut off in the last 40 yards.

With Jesse running in four events, I can not work him very hard through the week. His Monday workout and his Tuesday workout have been very, very light; usually nothing at all on Monday, light striding and some practice starts on Tuesday, and then a good workout on Wednesday. He likes to do jogging around the track--it is more than a jog, but he calls it a jog. It is easy striding. He usually runs two laps that way and does some easy striding up and down the track. That is one of the hard things to get him to do, to warm up sufficiently before he opens up. He likes to cut loose. I had a hard time getting across the idea that he can not cut loose unless he is really warmed up.

After he is good and warm then come the practice starts--five or six of them. A practice start to Jesse isn't what it was to George Simpson. A practice start for George was about 20 yards at top speed and coasting down; Jess goes about 55 to 75 yards full speed on every one of the starts, and walks leisurely back and is ready for another one. He gets five or six of those and then plays around a bit on the track or stands and talks. He has to be watched or he'll cool off too much--then without warning take a fast burst down the track. He loves to sit down and "yarn" with the track fans or other athletes while resting for the final part of his workout. As a conclusion to his workout, he goes through a good fast 220. He can go out any time and stride a 220 in 21.3 or 21.5, which is just good striding for him. He doesn't have to work to go that fast.

This might bring up the point as to whether Jesse can run a fast quarter of a mile. I think he can, but I do not think he ever will because it is too hard an event. If he did run a quarter probably that would be all he would be running, or possibly like Hardin, go in the low hurdles, and he is too valuable to the team to do that. It is lots easier for him to run in three sprint events and to broad jump than it would be to run the quarter and low hurdles.

Early in the year before the meets started, he ran a lot of quarters--striding. Along in January we started to work, and he ran 440's a couple of days a week. He would run a quarter as a top off of his workout. He always followed somebody, and in the last 100 or 150 yards I would tell him, "If you feel like it, go on out in front." He would usually pass a couple of quarter milers who were good for 50 seconds. He would pass them in the last half-lap and lead by 25 or 30 yards at the finish. Striding with them didn't seem to take any of the kick out of his finish. He had plenty of it when he wanted to put it on.

In the 220 he strides--he did at Southern California--for about 85 yards. He was running about two yards behind Draper at the 85 yard mark, and in the next 20 yards was out about 4 yards ahead of Draper. He put it on and Draper said he almost got sucked under by the breeze as he went past.

I had several talks with Draper after the meet and he just cannot understand how any other runner could go past a man as good as he was that easily. He was not trying to boast, but he knows he is a good 220 man and it was unbelievable to him that a man in so short a distance could go from behind him to three or four yards in front. What happened really, was that Jesse had been tied up pretty tightly by the trip to the coast, the banquets, the broadcasts and interviewing that he had gone through, so that it was not until the 85 yard mark in the 220 that he loosened up and became the Owens that I had seen run earlier in the season.

You cannot tell much about Jesse. You do not know whether he is running hard or easy. I hope he is "right" here during this meet. Those of you who have seen him I think will agree with me that it is hard to tell whether he is putting on everything he has or whether he is not. I know he did in the Big Ten Meet in the 220 because the cords in his neck were bulging out at the sides and his chin was up higher than I like to see it. He was really out to go as fast as he could go, and he went pretty fast.

Jesse will recover within 10 minutes after a 100 yard dash and go and broad jump. Even the 220 doesn't bother him for very many minutes. He recovers quickly.

I will say something about the hurdles. You will see him hurdle out here. He isn't a hurdler in the sense of the word that you think of a hurdler. He is a sprinter who runs the hurdles; and a sprinter with a 7-foot stride who runs the hurdles means, to me, that he has to make up three or four feet in each 20 yards. To make that extra distance up he sails over the hurdles. He doesn't try to cut down at all, but sails simply because if he didn't cover the ground over the hurdle, he would have to cover it in some other way, and so we just let him spring over the hurdle and he doesn't seem to lose any time at that point either.

You like your hurdlers, I know, to run right over the top of them and get back to the track as quickly as they can. That is all right for a boy that can stride 7½ or 8 feet, but for a boy who can only stride 7 feet, it is impossible.

In some of the indoor meets we were running over three low hurdles. He was chopping down. He can chop down when he wants to do it. You have seen enough colored runners run to know that they have some kind of a swinging gait they use to gain ground. It looks almost like a skip. This Jesse doesn't need to do. He can sail over the hurdles and not lose ground to the other hurdlers--while at the same time he gains the needed feet so that his stride will come even at the next hurdle.

In running with Paul (So. Calif.) last Saturday afternoon, I said to Jesse: "You were dogging it a little bit, weren't you?"

Jesse replied, "Well, I ran along beside him and found he couldn't run any faster and there was no use of me putting it on, was there?"

There he was running against a boy who has a tie for the world's record in the 220 yard low hurdles, and didn't have to exert himself.

All in all, Jesse is a marvelous athlete, with a fine balance, and the finest nervous system, and the finest tendons and muscles you could hope to have in a boy, and he is making me a pretty good coach. (Laughter) That is true. I have learned a lot from Jesse.

I do not want to ramble on here too long. Have you any questions? If so, I shall be glad to answer them if I can.

MR. NICHOLSON: What else do you have him do? You told us about Monday, Tuesday, and Wednesday.

MR. SNYDER: On Thursday it is just light striding. He comes out and runs around the track, then strides maybe 80 or 100 yards several times with a burst of speed on the end.

There is no work at all on Friday--but lots of it on Saturday.

QUESTION: What is the length of his run on the broad jump?

MR. SNYDER: 107 feet, 14 feet farther than he ran in high school. We added two running strides onto it. He cannot use check marks, which is rather unusual.

We went down to the K. of C. Meet in New York, hoping to break the record in the broad jump. He had jumped 25 feet 3 inches the year before. We figured that we could put the indoor broad jump record over 26 feet if we concentrated on his start and his check marks. We got down there and he was tied in a knot worrying about the check marks. He hit his first check mark with the wrong foot and he got to the board with the wrong foot and jumped 24 feet 11½ inches or something like that.

If you start him with a mark at 107 feet and let him go, he will hit somewhere within a few inches of the front of the board. He never fouls. On some occasions he won't even get to the board. His toe will be at the front edge, that is the edge towards the approach. He did that on one occasion--at the National Indoor Meet at New York this year. He jumped 25 feet 9 inches and had 10 inches that didn't count; were not allowed because he took off behind the board.

Frank Hill, Northwestern Track Coach, said on the way out here that he looked for Jesse to jump 29 or 30 feet most any time.

MR. NICHOLSON: The strange thing to me is that stride of 7 feet. It looks like it is more.

MR. SNYDER: It does, but it is not. Of course, his timing is just about perfect. There is no wasted action at all.

MR. YOUNG: How high are his feet off the ground at the crest of the broad jump?

MR. SNYDER: At the Big Ten Meet I think he must have had them five feet off the ground. I was up in the stand and I couldn't tell, but it looked to me as though he could have cleared a bar set at 5 feet on that jump.

MR. YOUNG: That was the thing that impressed me. He jumps higher in the air than anyone I have seen. If you were standing in front of the board, about twelve feet out, he would jump right over your head.

MR. SNYDER: He was all tightened up at Southern California in his 100 and in his two broad jumps. I do not believe he was over three feet in the air. He didn't look good at all, and it wasn't until he was about half way through the 220, when he became himself and looked like a runner.

QUESTION: I would like to get your reaction as to the circumstances in his start last Saturday. (Ohio-U.S.C. dual meet) When he took to his marks the announcer said that the champion of champions would undertake to break the world's record. He was held on the marks I thought an unusually long time. Did that bother him?

MR. SNYDER: Yes it did. But as I said before I think the demand on his energies, both nervous and physical, prior to the meet influenced his entire performance. He straightened up the instant the gun fired--he was up in a running position before his back foot ever hit the track. He is still a youngster and the fact that he was running on the Olympic Track, and was expected to equal his best previous marks made it impossibl for him to concentrate on starting. He couldn't run that way. Boone, I think, was about 4 feet ahead of him at the 10 yard mark.

MR. SPENCER: Being a newspaper man, I have something here of interest to you, as long as you are talking about that race. I have reference to an article written by Charlie Paddock, which I would like to read to you: "Owens did nothing to write home about in the 100. He won. He was not in danger at any time, from the gallant efforts of George Boone, the only other entry.

"Boone was away with the gun. Owens' right foot slipped as it left the back hole. The Ohio State flash was three feet behind at the twenty yard mark. He straightened up very fast--too fast, it seemed to the writer--but when he found himself, he was poetry in motion. He looked like Howard Drew used to, twenty, and more years ago. The lithe negro's shoulder action is more pronounced than Drew's, and he runs with his shoulders, as much as he does with his trim powerful legs.

"Jesse passed Boone in two strides, and floated for another twenty yards. Boone fought hard, and suddenly commenced to gain on Owens, who soon felt him at his shoulder, and immediately tied up. He managed to stay ahead, but looked terrible for a champion sprinter in a drive for the tape."

MR. SNYDER: He put on his worst exhibition of the year in the U.S.C. meet and yet he defeated the I.C. 4A champion. He didn't look like himself at all. With one exception I have never seen him look that way. Jesse was tired. After he ran the 100 he said he never had been so tired in his life. He rested about 15 minutes and went over to the broad jump and was still tired. But after he found himself in the 220, he was all right. He ran the low hurdles easily and then came back and broad jumped immediately after the low hurdles. He told me he felt twice as good when the meet was over as when it started. I believed him.

MR. HAMILTON: Do you give him rub downs?

MR. SNYDER: Yes, he gets his rub down before he goes on the track every day, and after he comes in, and in meets between races if there is time. There hasn't been time in these last meets so he stays on the track the whole time and doesn't get a rub until after his workout is over.

Thank you very much, boys, for your time. (Applause)

MR. HAMILTON: Thank you very much, Larry. I am sure we all enjoyed that discussion and we will watch Jesse's work with a lot more interest tomorrow and the next day, after having heard his coach discuss him.

Next we will hear from Bernie Moore, track and football coach at Louisianna State University, who will speak to us on "Training Methods Used by Glen Hardin and Jack Torrance."

TRAINING METHODS USED BY GLEN HARDIN AND JACK TORRANCE

MR. BERNIE H. MOORE (Track Coach, Louisiana State University):
Mr. Chairman and Gentlemen: In connection with Hardin it would be rather presumptuous on my part to say that I have coached Hardin into a champion. He was a great high school boy and had a great high school coach and was well grounded in fundamentals when he came to me.

One of the first things I tried to do with Hardin--and I think it probably did improve him some, was to talk to him about relaxation. He was still a little bit tight. He liked to go out on the track and do everything for speed. He wanted to hear that gun fire and immediately start out and see if he could run a quarter of a mile a little faster than he did in high school, and also the hurdles. I finally convinced him of the importance of getting off of that kind of a program, and got him on a program of taking a lap and concentrating on relaxation.

Now, when Hardin comes out on the field, the first thing he does is jog four easy laps every day. He comes out and takes these easy laps and then goes over on the grass and takes about 8 minutes of calisthenics, building up his body and his shoulders. That is the first thing he does.

Hardin has had quite a bit of trouble with his legs. He has had both legs partially pulled. To my way of thinking and coaching he hasn't had quite enough starting practice and quite enough fast work.

I think that his legs have held him back quite a good deal. The strange thing about it is he has hurt those legs every time working on the hurdles. He has never hurt them running a pace, a 300 or running a quarter; it has always been over the hurdles. So we have kept him off the hurdles more than I would like to have kept him off, thinking that probably he had a real chance to establish a very fine record in the low hurdles when his legs were in normal condition.

His Monday workout is normal--he jogs around the track 3 or 4 laps and takes his setting-up exercises, and just plays around on the track. But on Tuesday, if his legs are in good shape, he jogs and takes his setting-up exercise, he gets about 5 to 7 starts, and these starts are over 35 yards. Then he goes to the low hurdles and will take the first two hurdles at full speed twice or three times. Then to finish that he will take a fast 300 just about like he intends to run on Saturday, about 31 seconds. Then he jogs around the track once, and probably walks around the track, and that will end his day's work.

On Wednesday he will come out and take his easy mile again, and four or five starts. And then on Wednesday he likes to take 120 yards of low hurdles, spaced regularly just as rapidly as he can run it. Then we like to give him a quarter along about 51. And he runs the 300 yards easy, and the last 120 yards wide open. He works on his form and speed with the last part of his race.

On Thursday it is just a matter of coming out and jogging a few laps and a little setting-up exercise, and he calls it a day.

Friday is a complete off day.

That is about the schedule Hardin has followed during the season.

MR. NICHOLSON: What did you say he did on Wednesday? Give us that again.

MR. MOORE: On Wednesday he jogs the four laps, and about 8 minutes of setting-up exercises, and four or five starts, about 30 to 35 yards, and 120 yards of low hurdles as fast as he can run them wide open.

MR. NICHOLSON: How fast?

MR. MOORE: He will run them in around 12.5, and then he will take a quarter about 51, a very light 300 on that, and the last 120 he will breeze as fast as he can go.

MR. NICHOLSON: That quarter is that 51, or does he run a 300 on top of that?

MR. MOORE: No, one in 51 seconds, with a slow 300, leading up to the 130. I do change that workout sometimes during the season. If on Saturday, he is a little weak on endurance and looks like he needs a little over-distance work, I will give him, on Tuesday, instead of a 300, a hard 500; that is if his endurance looks short.

There is another thing about Hardin. He likes the gymnasium, likes to skip rope and he likes to go down and play with the pulleys.

Another thing he likes to do--and probably you will laugh about this, and I do not know if it does him any good--but he likes to turn on the radio and the victrola and tap dance for an hour. He will stand up in his room and tap dance for an hour and just keep going. He is great on that. I go up to his room lots of times before the workouts, or after the workouts and he is tap dancing. He is really good at it.

As I said, he likes to go in the gymnasium and fool around with the apparatus, and play around.

In the fall of the year, he goes out twice to three times a week and he will run anywhere from a mile to three miles around the track. Sometimes he goes out with the cross country boys and jogs in with them and takes half of their workouts easy. I hear some of the boys asking him questions on how he is able to relax in his running the way he does. This was his answer: "You have got to think about it. Take things easy and when you go along think of nothing but relaxation." That is the way he said he developed relaxation.

Another difficulty we had with Hardin in the hurdles was over-striding, getting up too close to them. We have had to work a lot on cutting down, taking a lot of easy work coming up to these hurdles, and stepping and snapping the lower part of the leg and knee down, snapping it quick so he can get it down. He has to take some work on that occasionally. Any time he starts shooting out across the hurdles he is going to be on top of the next hurdle and hit it. That happened in a 400 meter hurdle race at the Penn Relays. He got too close to it.

MR. NICHOLSON: Didn't he fall?

MR. MOORE: He fell flat. Of course, Hardin tried to do something in those 400 meter hurdles and it was one of the few times he ever did anything I told him not to do. He went out and tried to run these hurdles in 13 strides. I don't know much about the 400 meter hurdles, but I do not believe a man can do that. I think he took the first three or four in 13 and he came over the fourth one and went into the fifth and there he got into trouble. Had he gone from the gun at 15 he would have gone right on through in good shape.

Any questions about Hardin?

MR. HAMILTON: He runs a half mile, incidentally?

MR. MOORE: Yes, he can run about a 1:53 or 1:53.2 without any practice. He can go out and do that on the Relay team. I didn't work him over-distance because I didn't want to. I just felt like it probably wouldn't be good for him. Incidentally, he can run a half that fast without working for it.

I have always thought that Hardin's races, personally, should have been in the half mile and quarter. I really believe that if he had worked on the half like some of the other good boys have that he could have broken the world's record in it. That has always been my thought.

Hardin has great hurdling form. I think he is a great low hurdler, but he hasn't got the speed that Owens has got, or some other boys that have been running the hurdles.

QUESTION: What is the best time he has made in the 100?
MR. MOORE: He has never run but one or two, a good strong 9.9. It might have been 9.8. I doubt if he can run 9.8 without a lot of work.
MR. HAMILTON: How old a boy is he?
MR. MOORE: He is 22 now.
MR. HAMILTON: How good a 300 has he run?
MR. MOORE: Well, he can run very close to 30. If he tries his best quarters have been 31 or 30. That is when he made his best time. He said in the quarter last Saturday when he was defeated, that the 300 was too slow. And then after it was too slow he made the mistake of going out too soon and trying to sprint too soon, and shot himself on the sprint and then let down and this boy came up and he didn't have a second sprint in him. That is his theory, and also that of Billy Hayes, of how he sized up the race.

I will tell you an interesting thing about Hardin. The best quarter he ever ran in his life was at the Southeastern Conference Meet last year. He had had a pulled leg for two weeks and he hadn't done a thing for two weeks except a little light jogging around the track, and a lot of walking and calisthenics. We had his leg taped from his knee up as high as the trainer could tape it, and he went out Friday to qualify, and I was scared to death that he wouldn't get through. He did get through the quarter and decided he would try to get through the hurdles. He did that all right. He came back out there on Saturday and before I knew it he got in there and persuaded the trainer to take the tape off his leg. I watched him going out to the start of the quarter. I told him to take it easy, that 50 would win the quarter. I was over on the field busy with something else and he went down to the start of this quarter, with the tape off, and it made me sick. I could hardly look at him. But out he went, and he ran that in 46.8. He ran that after that type of workout for two weeks. So I figured then that I didn't know anything about coaching.
QUESTION: You said you were sick, but you recovered after that?
MR. MOORE: I recovered quickly after that. Like Coach Snyder said, "He is a great boy and he has got it." I think he would have gone great, regardless of coaching or anything else. Of course, he gets beat once in a while, like everybody else does, but still he is a great boy.
QUESTION: How tall is he?
MR. MOORE: About six, one and one-half.
QUESTION: How much does he weigh?
MR. MOORE: 164 in training condition, and around 168 off season.

Incidentally, this fall he is going out for football. I do not know what the situation will be. He was a great high school half back. In his freshman year at the university he got his knee knocked out and we took him off the football squad. They accused me of taking him off because I was track coach, and since I am a football coach now I will put him back this fall.
QUESTION: This is his last year?
MR. MOORE: In track, yes; he has one more season eligible in football.

Another thing about Hardin is that he is a temperate fellow in most every way. I think he is the finest kid about eating that I have ever seen. You can place all the food in the world in front of him and he is just like a squirrel; he will sit down and eat the things that are good for him, and just enough, and get up and leave the rest; he won't overeat. He is very fine about going to bed at night and sleeping. He gets plenty of sleep. Off season I know he is a light smoker. He never bothers me any about smoking during the season. I presume that he does not. He is very temperate in his living and keeps in pretty

good condition all the time.

Do you want me to say something about Torrance and his shot putting, or are you too tired?

Anyway, I have heard lots of talk about Torrance's form and lots of people have told me he wasn't so good. Lots of people have said that if Torrance had had as good form as Lyman he would have gotten 60 to 65 feet. Probably he would have. But when you start teaching a 250 pound boy to put the shot, who is 6 feet 4 inches tall, you have an entirely different problem on your hand than when you start teaching a 200 pound boy who is around 6 feet 1. I didn't know that until I started teaching Torrance. I am very much convinced of it because I had a freshman this year, who is another little boy, 6 feet 4, weighing 260 pounds and I am having the same problem with him that I had with Torrance.

Now the thing about them, when you get them across the ring, you get this 260 pounds started across the ring and they are going to fall out. They cannot control their weight. You have got to do something about it to hold them in the circle. The weight of the shot, which normally kicks a fellow back, if he is squarely behind it, won't hold him in the ring. You have got to get them set in a position where they can not go out.

I worked with Torrance during his whole freshman year trying some way to get him on across the circle. I used every method I had ever heard of to put him across there and set him so he wouldn't foul.

It was rather by accident that we got onto this form that he used. I kept on working and fooling around there until we kind of got on to this form and then we polished it up and he is now holding the shot in a normal orthodox way. He has a big hand and he is able to get the shot much higher on his fingers than most of the boys. He concentrates three knuckles, where the finger breaks, right through the middle of the shot. They go in the middle of the shot and the shot lies there and never touches the palm of the hand at all.

This other big boy that I had down there, he has the same trouble that Torrance had of traveling and falling out. The funny part about it, and the distressing part, is that he doesn't seem to be able to master this travel. I haven't been able to do a thing with him. He throws the shot about 49 feet. I haven't found a thing that will get him across there and get him set.

Now, the other boys--I have two pretty fair shot putters in training on the Varsity, one weighs about 185 pounds and the other about 195 pounds, and they have the regular orthodox style like any other shot putter. They get 46, 47 and once or twice got 48 feet.

My theory is that a fellow with that much weight (250 pounds) any time he starts pushing over with his back foot pushing himself across there, it is going to throw him in a position where it will cause him to foul. I may be foolish, but that is my theory.

Any questions?

QUESTION: Did Torrance do any outside shot putting?

MR. MOORE: Torrance came off the football field, he played tackle; then right onto the basket ball team, and played basket ball until the first of March, and from basket ball he came out for track. He also did a good deal of boxing. He likes to play with the sprinters, take a lot of starting work with them and have fun with them. He is also very proud of the fact that he can high jump five feet six inches and he likes to show that off, and he gets plenty of exercise in that.

Torrance is a very fast and active man. For example, Biff Jones, in his second year down there, used an unbalanced line formation and used Torrance at outside tackle on the strong side and he led the interference. With him coming around, weighing 250 pounds, he had to be fast. He was as good a blocker as I have seen on offense on any football team. He could really go to town.

The basketball team used him as the pivot man. He would come around on these pivot shots and I would like to see you guard him until he gave out. He would make five, six and nine baskets in 30 minutes.

QUESTION: How much did you emphasize the shot put in his arms?

MR. MOORE: You may not believe it, but he had a great snap in his wrist. I have seen him stand out there still and snap that shot 45 to 47 feet without letting his arm go further than that, just like that. (Indicating no shoulder motion.)

I think this about Torrance: If Torrance had had another year's competition, if he had been in football this past year, and basketball, and came out for track, in my mind he would have gotten 60 feet in the shot, because I think he was just beginning when it was over. He has worked out not over ten or twelve times this year. He has lost a lot of coordination.

MR. HAMILTON: I think Torrance's record and development is one of the phenomena of modern track. He is a man who hadn't thrown a shot until his sophomore year and yet by the time of his senior year he set a world's record of over 57 feet. There has been no other man that has thrown the shot over 50 feet who hasn't spent at least six or eight years working on it. This is not just luck and not bull strength that got Torrance out 57 feet. You cannot make me believe that. I am sure Mr. Moore deserves a world of credit for bringing this big boy along and making a champion out of him.

It is remarkable how many of your big shot putters are also excellent high jumpers for their weight, and excellent standing broad jumpers.

This brings us to the point where I turn the meeting back to our President.

MR. YOUNG: We will now take a recess for about ten minutes and return here for our business meeting, which will be for members only.

WHEREUPON, at 5:10 P.M. the Convention Session adjourned.

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